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GROWTH AND CHANGE IN THE ISRAELI DEFENSE FORCES
THROUGH SIX WARS

BY

LIEUTENANT COLONEL (P) KARL FARRIS

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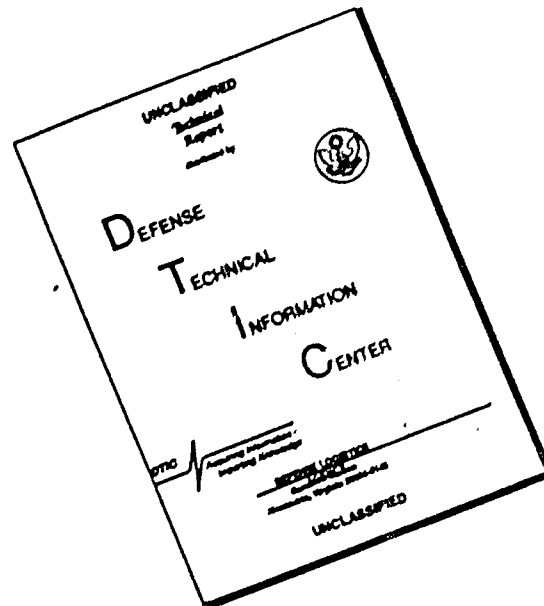
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A review of each of the six Arab-Israeli wars also clearly shows that the margin of victory for the Israeli's, in each case, has been the qualitative superiority of its manpower from the top leadership down to the level of the fighting soldier. The firepower, flexibility, and speed inherent in mechanized/armored operations can only be realized on the battlefield if the soldiers are technically and tactically proficient and the leaders are bold, imaginative, and decisive. This has been Israel's advantage in its wars with the Arabs.

USAWC MILITARY STUDIES PROGRAM PAPER

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**GROWTH AND CHANGE IN THE ISRAELI DEFENSE FORCES
THROUGH SIX WARS**

A Individual Research Project

by

Lieutenant Colonel (P) Karl Farris, AR

**Professor Michael I. Handel
Project Adviser**

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**US Army War College
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This paper traces the origins of the Israeli Defense Forces from the pre-independence underground Jewish militia, called the Haganah, and reviews each of the six Arab-Israeli wars. The focus is on the growth and change of the ground forces; more specifically, how the lessons from each of those conflicts were used to review and make changes where necessary in organization, equipment, doctrine and tactics. In other words, how the forces prepared for the next war based on the lessons gleaned from the previous conflict. The evidence and the IDF's continuing success show that they are both candid in assessing their performance and quick to implement changes at all levels where, and when, necessary.

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CHAPTER I

INTRODUCTION

The location of the modern Israeli state and its vulnerable borders have had an overriding influence on the shaping of its concept of security, its military doctrine, and the organization of its armed forces.

The area of Palestine that was apportioned to the proposed Jewish state by the UN partition resolution of 1947 was bounded on all sides by hostile neighbors which refused to recognize the validity of partition or the authority of the United Nations to implement the plan.

In the north Israeli territory was dominated by the Syrian controlled Golan heights which towered over numerous Jewish settlements, the Sea of Galilee, and controlled the sources of the Jordan river which is Israel's water lifeline.

In the east, the Judean and Samarian mountain plateau was to be part of the eventual Palestinian Arab state but quickly fell under Jordanian control. Possession of this mountain ridge has historically been a prerequisite for security of the fertile Mediterranean coastal plain.

The southern boundary with Egypt along the Sinai presented a long and vulnerable border which was dangerous as long as Egyptian forces remained forward based in the Sinai.

In addition to being surrounded by armed and hostile neighbors, Israel possessed no strategic depth. Even after the

War of Independence at several points the distance between Jordanian controlled territory in the east and the Mediterranean Sea in the west was less than 10 miles. A quick military thrust from the east could sever the state at the middle. About the only advantage conferred on Israel by its isolation in the midst of quantitatively superior Arab forces was being able to conduct military operations on internal lines of communication. Therefore, from the very beginning of the state, Israel's military planners based their plans on a flexible defense and organized their military forces on the following principles:¹

a. Full exploitation of all national resources in time of war. A small standing army in times of peace would be expanded quickly by reserves in times of crisis and war. The whole nation was to be a reservoir for the army.

b. The air and naval forces had to be standing regular forces to assist the small standing conscript army in containing enemy offensives until the reserves can be fully mobilized.

c. The creation of artificial strategic depth by means of an area defense. Every settlement had to become a fighting position in wartime. The location of future settlements would be undertaken with both local and national defense in mind.

In addition to the dictates of geography, a second factor of decisive importance in the shaping of Israel's defensive doctrine was the problem of how to deter war when there are "few against many." Deterrence required military superiority. Israel's military superiority would have to be built on qualitative superiority not only to deter war but to win quickly and decisively should deterrence fail.

The balance of this essay will be devoted to reviewing each of the six Arab-Israeli conflicts to see how the Israeli Defense Forces have met the challenge of maintaining qualitative superiority in the face of growing Arab military potential and capabilities.

CHAPTER I

ENDNOTES

1. Israel Tal, "Israel's Defense Doctrine: Background and Dynamics," Military Review, (March 1978), p. 22.

CHAPTER 11

BEGINNINGS OF THE ISRAELI DEFENSE FORCES

The years 1917 - 1948 are the formative years of modern Jewish military history. It was during this era that the underground Jewish militia, the Haganah, was founded. It grew in effectiveness to the point of being able to maintain the integrity of the newly declared State of Israel against a vastly superior coalition of armed Palestinian Arabs supported by the regular armies of the neighboring Arab states.

Many of the "peculiarities" found in the current Israeli Defense Forces are a direct outgrowth from the military experience of the Haganah. Haganah is the Jewish word for defense. The need for organized defense and security of Jews and Jewish settlements in Palestine became evident following World War I when Arab reaction to the prospects of a Jewish state in Palestine turned violent. During Arab "riots" in 1920 and 1921 the British mandatory administration was either unable or unwilling to provide for the physical security of Jews. Therefore no alternative was seen except for the Jews to organize for their own security. Thus, a Jewish defense force, the Haganah, was founded. Its immediate predecessor was a small elite Jewish security organization called "Watchman" which was composed of men hired and paid to provide security. The Haganah though was founded under a much broader concept. It was to be a democratic militia in which all able bodied Jews would serve.¹

Furthermore, it was subordinated to the elected political representatives of the Palestinian Jews.

Major outbreaks of Arab violence against Jews occurred again in 1929 and from 1936-1939. Each of these periods spurred development of the Haganah into a Jewish national army even though it remained both an illegal and underground organization. Training had to be conducted in secret and weapons and arms were illegally secured and had to be hidden from British authorities.

While the Haganah's official status remained as an illegal force, this did not prevent either the British Army or the British civilian mandatory administration from cooperating with it when it suited their interests. The large scale Arab riots which lasted from 1936-1939 was one such period of "cooperation" necessitated by the fact that British military forces were insufficient to suppress the widespread violence. British army units included Jewish "interpreters" who were, in fact, liaison personnel from the Haganah.²

One aspect of cooperation during this period resulted in a lasting impact on the Jewish and later the Israeli approach to combat. This was the assignment of Captain Orde Wingate of the British Army to Palestine and his unofficial authorization permitting use of Jewish units to defend the critical oil pipelines running from Iraq through northern Palestine against attacks by Arab marauders.

Wingate simply utilized the Haganah which was eager to profit from the benefits of unofficial cooperation with the British Army. The Haganah men he recruited into what he called "Special Night Squads" were young, they came from settlements in

the Galilee and therefore were familiar with the country through which the pipeline ran. Between 1937 and 1938 these Special Night Squads succeeded in clearing the whole northern portion of Palestine of Arab marauders. They accomplished this by offensive rather than defensive action. Wingate trained them to operate at night, to ambush the enemy as he was moving and to carry out raids against enemy bases. Rather than leaving the initiative with the Arab raiders to attack where and when they chose, they were now subject to attack at any time.

The tactical lessons learned from the operations of Wingate's Special Night Squads were soon spread throughout the Haganah. The result was that the previous defensive mind-set of the Haganah of defending Jewish territory from trenches and behind barbed wire was augmented by a more aggressive and proactive defense which emphasized taking the fight to the enemy. This remains one of the doctrinal hallmarks of the Israeli Defense Forces. Wingate's specific legacy to the Israeli fighting doctrine has been characterized as follows:

a. First and foremost he established the importance of the example set by the commander whether it be in bold or original action or in the endurance of long and exhausting marches.

b. That units must adhere to a purposeful discipline with emphasis on the practical aspect.

c. There must be thoroughness and precision in drawing up plans for an operation. Before beginning an operation all men must understand the basis and the purpose of the plan. But however carefully plans were prepared, one must be ready to

improvise in accordance with the changing conditions of battle. Therefore subordinates must be trained and given authority to make independent decisions.

d. He also taught the importance of concentrating on the major objective, of achieving then exploiting surprise, and of the ideological motivation of soldiers.³

When World War II broke out the Haganah encouraged enlistment of its members in the British Army. They saw this as a way to get further training for its members. However, at the beginning British policy was to limit Jewish enlistment and to confine those who were allowed to enlist to duties in support units. Later in the war, as the British personnel situation became critical, Palestinian Jews were permitted to go into combat units. Finally, even a wholly Jewish combat brigade group was formed. Almost every officer and soldier in that brigade was also a Haganah member.⁴ Overall, in excess of 25,000 Palestinian Jews served in the British forces in World War II.

Within Palestine during the war, the Jewish leadership authorized some permanently mobilized Haganah units. Early in the war this was in response to the possibility that British forces might be forced to withdraw leaving control of the area to Germany and Italy. These units were called the Palmach and they quickly entered into unofficial cooperation with the British Army which supplied them with both weapons and training. One of the Palmach's most spectacular operations was their assistance in the British invasion of Syria in 1941 to drive out the French Vichy administration. Palmach members dressed as Arabs moved into Syria ahead of British forces to reconnoiter enemy positions and

cut their lines of communications. They also acted as guides for the British forces leading them into Syria.⁵ It was during this operation that one of the Palmach's promising young leaders, Moshe Dayan, was severely wounded and lost his left eye.

In the bleak summer of 1942 when German forces penetrated deep into Egypt, British plans called for Palmach units to conduct guerrilla warfare against Axis units occupying Palestine should the British be forced to evacuate.

British support of the Palmach ended as quickly as the Axis threat ended in North Africa. In an abrupt reversal of policy the British soon demanded that the Palmach turn-in its weapons and disband.⁶ With the sudden withdrawal of British support the Jewish leadership found it difficult to support a standing armed force. To solve this problem it was decided to disperse and locate Palmach forces at platoon level in kibbutzim throughout Palestine. Palmach soldiers would earn their keep by spending at least half of their time working in the fields. In terms of higher organizations, the adjoining platoons in a given area formed companies while adjoining companies could be formed into battalions if needed.⁷ Four regionally based Palmach battalion headquarters were established: one in the Galilee, one in the Jezreel Valley, a third based on the kibbutzim of the Judean hills and the northern Negev, and the final one in the vicinity of Tel Aviv. This last battalion also included the headquarters of the Palmach as well as fledgling air and naval elements.

Based in the kibbutzim the Palmach soon considered itself as more than just a military unit. It attracted a special type of

recruits who were for the most part the sons and daughters of the older and more established collective settlements. Therefore it began to identify itself with the pioneering spirit of the collective agricultural settlements. Palmach members viewed themselves as a communal elite or, in the words of their commander, Yitzak Sadeh, a "fellowship of fighters." Discipline came to be based on social and peer pressure and on the ideological indoctrination of Jewish nationalism. One of the outward expressions of what the Palmach considered its higher "egalitarian discipline" was the refusal to adopt a standard uniform, to have badges of rank or distinction, or to adopt the military custom of saluting. Palmach commanders were invariably young. They were expected to lead during an attack and to stay behind to cover retreat if necessary. Under Sadeh who had been trained by Wingate, Palmach training stressed surprise, mobility, and resourcefulness when attacking rather than frontal assaults. Initiative at all levels was encouraged.⁸

Palmach training was physically demanding. It was conducted in a field environment which stressed navigation and orientation skills and enabled its members to learn on foot the topography of the country over which they would be expected to fight. Its members were taught to use a variety of weapons from hand grenades, to knives, to mortars, machine guns, and explosives. Expertise in explosives became a particular hallmark of the Palmach. It was used in two ways: to destroy selected targets and as a substitute for artillery (since the Haganah had none) to soften up fortified positions prior to storming them. Because of

their recognized lack of firepower and supporting fires the Palmach preferred to operate and fight at night.⁹

Towards the close of World War II a reserve system was introduced in the Palmach. Every private was to serve on "active duty" for only two years and then become a member of a reserve unit. These reservists were to be called up for training each year and they were expected from time to time to participate in active military operations.¹⁰ To provide sufficient military leaders for a much larger army in case of mobilization the Palmach also began a policy of putting promising soldiers through a commanders course even though there were no leadership positions to which they could be assigned. Finally the Palmach expanded the foundations of its air and naval components by training candidates in civilian air and maritime sports clubs.

Thus, by the end of World War II, the Palmach of the Haganah had four well trained, well disciplined, and superbly motivated and spirited battalions. These were to prove invaluable during the post-war struggle against the British Army and mandate authorities and finally they were probably the decisive element in the Jewish successes during first months of the Israeli War of Independence.

Following World War II the Jewish struggle against the British focused on illegal immigration of Jews to Palestine. It was an uneven contest. The British controlled the seas and the coast of Palestine. They could conduct unobstructed aerial reconnaissance and they had strong mobile forces which could move quickly to any point within Palestine. To operate against the British in this environment the Haganah leadership had to plan

and conduct operations with extreme precision and skill. Targeted areas had to be ones which had a high pay-off in hampering British operations such as destroying bridges, and selected military equipment, such as radar installations. These operations had to be carefully planned and carried out at night. Directing and executing such complex operations which required exact training for the convergence of units on a target and then quick dispersal greatly increased the Haganah's tactical planning skills.

On a larger scale, the Haganah leadership was also charged with coordinating the illegal flow of Jews from Europe to Palestine. This required organizing underground escape routes from countries of origin to ports of embarkation, purchasing and crewing of ships, and organization of secret and secure beachheads in Palestine to receive the illegal immigrants. Once there the immigrants had to be quickly smuggled to distant and dispersed settlements avoiding the watchful eyes of the British. The experience gained in orchestrating this worldwide network proved invaluable to the Haganah leadership in preparing it for planning and directing operations on several fronts during the War of Independence which erupted immediately upon the British departure from Palestine.

CHAPTER II

ENDNOTES

1. Moshe Pearlman, The Army of Israel, p. 23.
2. Ibid., p. 29.
3. Yigal Allon, The Making of Israel's Army, pp. 10-11.
4. Pearlman, p. 35.
5. Ibid., p. 41.
6. Gunther Rothenberg, The Anatomy of the Israeli Army,
p. 29.
7. Allon, p. 20.
8. Rothenberg, p. 30.
9. Allon, p. 20.
10. Ibid., p. 21.

CHAPTER III

THE WAR OF INDEPENDENCE, 1947-1949

ORGANIZATION AND EQUIPMENT

The War of Independence which began in late November 1947 and lasted until 1949 has been the longest and bloodiest of the many "rounds" in the Arab-Israeli conflict. In terms of organization of forces and the nature of operations that were conducted it can be divided into three distinct phases which are discussed below. At its conclusion, in 1949, the Israeli defense forces had been transformed from a loose collection of units with varying qualities into a centralized national defense establishment of 12 combat brigades with requisite combat and combat support elements as well as independent air and naval branches.¹

The first phase of the war which lasted from December 1947 to mid-May 1948 was essentially a continuation of the communal struggle between Palestinian Jews and Arabs. It began on 29 November 1947 with approval by the United Nations of the partition plan (which was rejected by the Arab states) and quickly evolved into incidences of sniping, street fighting, terrorism, and guerrilla warfare which divided the area of Palestine into Jewish and Arab dominated enclaves.

The Palestinian Arabs had made little preparation for the conflict but they possessed substantial assets for conducting a guerrilla campaign. They were superior in numbers, well equipped

with small arms, had the active support of neighboring Arab states, and were generally favored over the Jews by both the British civil administration and British military forces.

As early as December 1947 individual Arab volunteers as well as units were coming into Palestine to assist the Arabs in fighting the Jews. Arab irregulars and volunteers probably numbered between 25,000 and 30,000. While there was little cooperation between the various groups, the overall Arab plan was simple enough. The area for the proposed Jewish state was wide open to attack. By interdicting and controlling the lines of communications between the widely separated Jewish settlements and enclaves the Arabs felt they could force the Jews to recognize that creation in Palestine of a Jewish state was simply not viable. Because of the Jewish focus on securing the roads which connected the Jewish areas this first phase of the War of Independence became known as the battle for the roads.

When the war began the Haganah consisted of approximately 43,000 men and women. However, the bulk of these, about 32,000, belonged to the static home guard which was trained only to guard local areas and settlements and was poorly armed. The more mobile element of the Haganah, known as the HISH, consisted of 8,000 members organized in battalions of several hundred men but trained to fight only at company level. The Haganah's only full time force was still the Palmach which numbered slightly over 3,000 men and women plus 1,000 trained reservists organized into four battalions. In addition to these, a sizable source of trained military manpower was available in those Jews who had

served with the allied armies during World War II. These were absorbed early by the mobile units of the Haganah (HISH) as it expanded.

The Jews had neither armor nor artillery. Air support, if it can be called that, came from nine light aircraft and about 25 trained pilots. The naval arm was comprised entirely of a small team of frogmen and a few armed motorboats.³ Weapons available included 17,600 rifles and submachine guns of many different type and caliber, ten anti-tank rifles, 775 light and medium machine guns, 650 2-inch mortars and 50 3-inch mortars.⁴

The objectives of the Haganah during the first phase of the war were to:

1. Defend and retain all settlements.
2. Establish Jewish territorial continuity in each predominantly Jewish zone by securing the internal road network and lines of communication.
3. Avoid any action against the Arabs which might cause British military involvement and thereby cause a delay in the British evacuation.
4. Prepare for the larger conflict against the regular armies of the bordering Arab states which the Jews realized would begin once the British had departed.⁵

By the time of the final evacuation of British forces on 14 May 1948 the above aims had largely been accomplished. The Jews had consolidated their hold on the densely populated coastal strip, the western and northeastern Galilee, and the northern Negev. And, they had proceeded a long way toward mobilizing and effectively organizing for the second stage of the conflict which began on 15 May 1948 when the armies of Egypt, Jordan, Iraq, Lebanon, and Syria intervened. This second stage of the War of

Liberation which lasted from 15 May to 11 June was a defensive phase.

The five Arab states which invaded Palestine had, between them, a force of 80,000 to 90,000 soldiers. In anticipation of an easy victory they committed only 30,000. The Egyptian, Jordanian, and Iraqi units were organized, trained, and equipped on the British model. The Syrian and Lebanese were patterned after the French. In addition to an adequate supply of infantry weapons the Arabs fielded 152 pieces of artillery, 150 armored cars, 20-40 tanks and 55 tactical fighter aircraft.⁶

By 15 May 1948 the Jewish forces had also improved considerably. The mobile elements of the Haganah had been increased in excess of 18,000 and formed six territorial based brigades. The Palmach had doubled its size to 6,000 and was formed into three brigades. Artillery, Engineer, and Military Police Corps had been formed and placed under an operational general headquarters. Overall, mobilized Jewish manpower outside of the home guard now totaled 32,500. Availability of arms, was however, still a major handicap. At the beginning of this second phase the Israeli's had no operational tanks and for fire support (except mortars) only a few mountain howitzers and ten 20mm guns.⁷

The Arab armies which attacked on all fronts had an excellent chance of success. They were superior in almost every objective measurement of military power. Even though the Haganah had grown it was still not fully operational as a military force and its best units, the Palmach which had been expanded to brigades, and which had borne the brunt of the battle against the

Arab irregulars in the first phase had suffered heavily. The Arabs, however, again failed to achieve their objectives. A key element in the successful defense during this phase was the heroic resistance of the hopelessly outgunned settlements which were astride the paths of the invading armies. Next in importance was the decision that even though the Haganah was overall inferior to the Arab armies it would not rely solely on defense to stop the Arab invasion but would employ a combination of defense and offensive action to keep the Arab armies off balance. Eventually by sheer determination and sacrifice the advance of the Arab armies was halted and a stalemate was reached on 11 June which resulted in a cease fire.⁸

During this second phase of the War of Independence the newly created Army of Israel had fought a desperate series of battles. Casualties had been high, especially in officer's and NCOs, a trend which has continued in each of Israel's succeeding wars. Some territory had been lost, a few settlements had been overrun and Jerusalem remained besieged. But, the invasion of the Arab regular Armies had been stopped.

Both sides now used the temporary cease fire to strengthen their positions in preparation for the third and final phase. The Jews used the time to consolidate every aspect of their military organization. The Haganah had been officially declared as the army of the state of Israel on May 26, 1948. Soldiers now took an oath of allegiance to the new state. Standard uniforms were introduced (not necessarily worn though), and ranks were created for officer's and NCO's.⁹ The weapons pipeline to Israel

was flowing by this time and three new brigades were formed. One of these, was organized as an armored brigade although as late as October 1948 it could still only muster 13 tanks. The infantry brigades soon came to have a respectable amount of equipment procured mainly from France and Czechoslovakia with Soviet approval. A quantity of artillery had been obtained as well as some Czech Messerschmits, English Spitfires,- and US DC-3's for the air force.¹⁰

When fighting resumed on 8 July 1948 the Israeli Army was still inferior in numbers and amount of equipment to the Arabs but it was superior in organization, discipline, and fighting spirit.

Once more the Jewish command decided a defensive strategy would be inappropriate as this would force them to react to the Arabs. Therefore, as soon as the cease fire ended, the Israeli forces initiated a series of offensive actions in which they skillfully shifted their main effort from one front to another to drive the Arab armies back. The advantage of interior lines and the Arab failure to cooperate and establish a unified command enabled the Israeli's to concentrate their forces and defeat each of the Arab armies separately. During this entire phase the Israeli's maintained the initiative.

Another cease fire was imposed on 19 July which lasted until 10 October. During this second cease fire command and control of the Israeli war effort was reorganized by the establishment of four territorial commands placed between general headquarters and the field combat brigades. These were a newly created Northern Front which consisted of the entire Galilee; an Eastern Front

which covered the Samaria and Sharon areas; a Central Front consisting of the Tel-Aviv/Jerusalem axis; and a Southern Front with responsibilities for the Southern half of Palestine. Strategic direction remained in the hands of General Headquarters while tactical operations became the responsibility of the Fronts and the Brigades. It was also decided that no further combat brigades would be formed. Additional resources of both manpower and weapons would be utilized within the existing twelve brigades. One additional change which had a significant impact on the shape of the future of the Israeli army was the abolition of a separate headquarters for the Palmach.

When fighting resumed in October, Israeli mobilized manpower had reached 80,000. Artillery had grown to 250 pieces. There were over 1,000 mortars, 675 anti-tank rifles, and close to 8,000 machine guns. Israeli operations were now conducted as a series of multi-brigade level offensives which concentrated on and defeated one Arab army at a time. By the end of the war the Egyptians had been driven from the Negev, the Syrians from the Galilee, Lebanon had been penetrated up to the Litani River, and the Arab Liberation Army was completely defeated and it simply disappeared.

DOCTRINE/TACTICS

Israel's army in its present form has grown directly out of the Army that was victorious in the War of Liberation. Many of the distinctive features of the Army of 1949 have remained in the Israeli Defense Forces. It has been said that since the Jews

largely lacked any military traditions they were, and have been, more receptive to original methods. The leadership during the war was homegrown and very young. Six of the twelve brigade commanders came from the Palmach which also provided a disproportionately large number of the combat leaders in all units. Since many of these officers had not been trained solely as military professionals they approached military problems from an intellectual rather than an authoritarian basis.

While during the war there was no prescribed method or doctrine of leadership and command, by the end one had emerged which became standard throughout the army and contributed significantly to the tactical success enjoyed by the Israeli forces since then. The doctrine of combat leadership was based on the principle of maintenance of the objective while at the same time allowing the selection of tactics and methods used in gaining the objective to be left to the discretion of commanders on the scene.¹¹ This came from the realization that in the confusion of combat success often depends on a rapid tactical response to a specific situation faced by a unit. And, that valuable opportunities could be lost when tactical decisions had to be referred for guidance and resolution to higher levels. The lower the echelon of decisions, the nearer the decisionmaker is to the scene of battle and the faster his response. The burden of the fighting during the war had been at the battalion and company level. It proved essential to allow these commanders to act on their own initiative.

Another feature of the tactical decisionmaking process in the Israeli Army during the war was its often democratic

character. Tactical plans and orders were likely to be the result of an open discussion in which the soundness of the leaders argument meant more than his authority to implement it. The final element of the leadership doctrine that emerged was that officers were expected to be the first to advance. They were to set the example for their men by personal action. By being first to advance they would be "pulling" their men forward with them.

The operational doctrine which emerged during the war was offensive. The mobile brigades were not primarily used for static defensive tasks but were concentrated for offensive action thereby forcing the enemy to react to Israeli action rather than merely responding to Arab attacks. Offensive action was viewed as necessary in maintaining the initiative, keeping the enemy off balance, and imposing ones will on the enemy.

For a number of reasons, armor had performed poorly during the war. The artillery that was available was too small in caliber and of insufficient range to make an appreciable impact on the outcome of a battle. Success had depended on the lightly armed but highly motivated infantry soldier. To compensate for Arab superiority in fire support and crew served weapons which were generally well employed by the Arab regulars in prepared defensive positions the Israeli infantry adopted tactics which can be best described as the "indirect approach." Assaults were not planned with the intent of overwhelming the enemy by material superiority or by wearing him down in a battle of attrition. The intent rather was to win quickly by breaking the defenders

equilibrium. Therefore the standard method used in other armies of fighting to the objective by fire and movement culminating in a coordinated assault was dropped in favor of attacking by stealth during periods of darkness to reach the objective whereupon surprise and superior close fighting skills would quickly rout the enemy.¹²

LESSONS

Soon after the armistice the Israeli's realized there would be no permanent peace with the Arabs. This forced them to develop a military structure strong enough to deter attack and, if deterrence failed, to be successful in war should one occur.

Economic and demographic considerations precluded maintenance of a large standing army. Compounding the problem was the fact that a lack of strategic depth precluded adoption of a defensive strategy. The area of the new state was simply too small in which to trade space for time.

The solution was found in creating a military establishment based on reserve forces which would be immediately available and sufficiently trained to go directly into combat after being called to active duty. The army was designed on a three tier structure consisting of a small professional cadre of officers and NCO's, a large number of conscripts, and supported by a highly trained civilian reserve. The standing army of conscripts and professional leaders would be as small as possible. The bulk of the army would be composed of trained reservists called up annually for training and mobilized in case of emergency. Reservists were not formed into a general pool, but were

earmarked for specific units. On mobilization they would join and fight in those units.

To further economize on military expenditures all state activities such as transportation, hospitals, and communications would be managed and expanded to serve both the needs of the civilian community as well as the military.¹³

While the government was busy defining the broad nature of the military establishment and its place in the society the army was reviewing organization and operational doctrine as well as tactics for the effective employment of those forces. That such a broad reappraisal was conducted after the war is both interesting and surprising since, after all, the army had been successful. The ability of the Israeli Defense Forces then and now to critically review and evaluate their operations have helped them to maintain a qualitative edge over their opponents.

The new operational doctrine which emerged mandated swift offensives to quickly defeat an enemy and terminate war in his territory on terms favorable to Israel. After considering several types of tactical organizations the independent brigade structure of three combat battalions with organic combat support and combat service support elements was adopted as the standard army formation. Only these could carry out the swift offensives envisioned in the new doctrine.

The poor performance of "armor" during the war was correctly recognized as being the result of mixed nationality of crews, little experience in maintenance, and no experience in armor-infantry cooperation. The positive potential of armor was

recognized in the new doctrine which assigned armored brigades the task of cutting deep into the enemy's rear without concern about flank's or supply lines and to remain concentrated in spearheads to attack the flanks and rear of the enemy.¹⁴

Overall, the charter laid down for the operation's and tactics of the new Israeli Defense Forces was to be offensive in spirit, planning, and organization even if the immediate task was defensive.

CHAPTER III

ENDNOTES

1. Gunther Rothenberg, The Anatomy of the Israeli Army, p. 57.
2. Ibid., pp. 39-41.
3. E. Luttwak and D. Horowitz, The Israeli Army, pp. 23-25.
4. Ibid., 24-25.
5. Yigal Allon, The Making of Israel's Army, p. 31.
6. Luttwak, p. 30.
7. Rothenberg, p. 58.
8. Allon, pp. 34-35.
9. Ibid., p. 36.
10. Rothenberg, p. 58.
11. Luttwak, p. 53.
12. Ibid., p. 59.
13. Allon, p. 46.
14. Luttwak, p. 91.

CHAPTER IV

THE 1956 SINAI WAR

ORGANIZATION AND EQUIPMENT

The period between the War of Independence and the Sinai War witnessed first a dangerous decline in the effectiveness and morale of the Israeli Defense Forces followed by a revival in fighting skills and spirit spurred largely by the driving energy of Chief of Staff Moshe Dayan.

Dealing with Arab terrorist infiltrators was Israel's first military challenge following the War of Independence. Israel's military response which was directed at both Arab military and civilian targets was at first a series of embarrassing failures. Beginning in 1951 the IDF reprisals were marked by a poor level of execution as units often failed to carry out their mission when encountering relatively light resistance. An evaluation of these actions revealed that the problem stemmed primarily from a lack of combat skills on the part of the soldiers. In concentrating on standard garrison "spit and polish" after the War of Independence the IDF had apparently lost much of its toughness.

By establishing and using an elite unit specializing in reprisals and then the paratroopers, Moshe Dayan deliberately set out to model and evoke a competitive response from the rest of the army to raise its fighting skills. Gradually the process worked as all units began to aspire to the standards set by the

elite paratroopers. In their simplest form these standards were that a unit would not return unless it had successfully completed its mission. As in Palmach units of the past, the commander was expected to lead his men by example, by leading from the front.

By the time of the Sinai War the fighting spirit of the army had been rejuvenated and, again through Dayan's influence, it was imbued with an offensive fighting doctrine and spirit.

While Dayan can be credited with rebuilding and shaping the fighting spirit of the Israeli forces prior to the 1956 war, other of his influences were not as helpful. Dayan's experiences had been in the infantry. He appreciated the importance of motorizing and mechanizing the infantry. He had commanded a jeep mounted reconnaissance battalion during the War of Independence. But it was not until after the 1956 campaign that he began to understand that armor brought mobility to the battlefield not because of speed (in which obviously many other military vehicles were better), but because its protected weapons platform could maneuver successfully under fire. Therefore, prior to the war, when he became Chief of Staff, Dayan retarded the growth of the armored corps insisting tanks should be employed primarily to assist the advance of infantry. He also neglected to increase the army's logistical support elements which were needed both to support the growing mechanization of the army and to effectively sustain forces employing the espoused offensive doctrine.

As early as 1952 Israel considered going to war with Egypt in an attempt to stop the terrorist incidences. The probability of war with Egypt became almost certain by late 1955 when

President Nasser announced a wide reaching arms deal with Czechoslovakia which was to provide Egypt with modern Soviet weapons to include 530 artillery pieces, 150 jet fighter aircraft, 50 bombers and several naval craft to include submarines. An Egyptian army equipped and trained with these weapons would pose a grave threat to Israel. It was estimated that these new weapons could not be fully assimilated by Egypt's armed forces until 1957. Therefore preemptive military action by Israel against Egypt prior to 1957 began to be planned as a political and military possibility.

Since 1954 Israel had also been upgrading its armaments largely with purchases from France. By the time Israel launched its attack against Egypt in late October 1956 the IDF had increased its armor force to 250 M-4 Shermans of various models and 100 AMX-13's. There were also about 500 M-3 Halftracks and 60 105mm SP guns mounted on AMX-13 chassis. With this equipment the IDF was able to establish two new reserve armored brigades, the 27th and the 37th for a total of three. However none of these were organized or equipped alike. The veteran 7th Armored Brigade consisted of two tank battalions, one equipped with Shermans and the other with AMX-13's, and one mechanized and one motorized battalion. The 37th Brigade also had a Sherman equipped battalion but only an additional armor company equipped with the AMX-13. It also had a mechanized and a motorized battalion. Finally the 27th Brigade had a total of only four tank companies, three Sherman equipped and one with the AMX-13. As the others it contained a mechanized and a motorized battalion. Altogether, when mobilized, the IDF consisted of 17

combat brigades; 3 armored, one parachute and 13 infantry. The infantry brigades were numerically the largest with a strength of about 4500 and organized into three rifle battalions, a heavy mortar company, a reconnaissance company, a signal platoon, an engineer platoon and usually an anti-aircraft platoon.¹

Individual infantry weapons were a mix of submachine guns and bolt action rifles.

At this same time the Israeli Air Force consisted of 60 jet aircraft (mix of British Meteors, and French Ouragons and Mysteres IV) and 76 piston engine fighters (mainly US Mustangs).

A major combat equipment comparison favored the Egyptians in both quantity and quality. Neither the Sherman's nor the AMX-13's were equal to the T-34/85 which was superior in armor protection, firepower, and mobility. Egypt also possessed an all jet air force with over 115 fighters and 49 light bombers. Egypt's 45 MIG fighters were superior to any of the Israeli aircraft.

For their assault into the Sinai the Israeli's attacked with six brigades grouped into two divisional size task forces along the northern routes through the desert. The Parachute Brigade operated independently and the 7th Armored Brigade along with the 9th Infantry Brigade initially formed a command reserve.

Egyptian deployment covered the major approaches into the Sinai from the east with the Third Infantry Division. The Eighth Infantry Division was stationed in the Gaza Strip. There were two reinforced battalions at Sharm el Sheikh and an armored

brigade back at the Suez Canal earmarked for the defense of the Sinai. Overall the Israeli's enjoyed a slight numerical superiority since the Egyptian units were not at full strength.

DOCTRINE/TACTICS

On the surface it seemed that the Israeli's understood the proper role of armor. A separate Armored Corps Inspectorate had been established in 1953 and, as mentioned, two additional armor brigades had been created. However, the doctrine for employment of armor was still being debated. This continued through the war. Dayan supported the "mobile infantry school" which drew on the experiences from the War of Independence and concluded that tanks could best be used to support the infantry. They felt tanks were simply mechanically unreliable and could not be used in independent operations. And they looked to fast moving infantry mounted in halftracks, armored cars, or armed jeeps to carry the battle into the rear of the enemy. Tanks were to be carried forward on transporters and unloaded when needed to assist the infantry in assaulting fortified positions or fighting enemy armor.

The armor proponents insisted that tanks were more than infantry support systems. They argued that tanks were the crucial weapon of the ground forces in modern combat. They should be massed in powerful combat formations which included mechanized infantry and artillery to quickly rupture enemy defenses and then exploit the breakthrough.

With Moshe Dayan supporting the mobile infantry school, the armor enthusiasts lost the debate. Israeli armor was not massed

into powerful spearheads to lead the attack and break through the Egyptian defenses. This task was assigned to the infantry. The tanks of the 27th and 37th brigades were parceled out by companies to provide armor support to infantry brigades. In somewhat of a concession the 7th Armored Brigade was allowed to retain its tanks. However, the campaign plan assigned it to command reserve for commitment only when the infantry had breached the Egyptian defenses.²

The doctrinal debate concerning the role of armor aside, the Israeli plan was a brilliant example of the indirect approach. Initial combat operations were so disguised that for one entire day the Egyptians failed to understand that the Israeli's had, in fact, launched a major assault, not just a reprisal action. Operationally the plan was to avoid attrition battles with Egyptian units defending in the Sinai. The two divisional size task forces were instructed to operate independently and to attempt, if at all possible, to reach their objectives deep in the Sinai on their first thrust. Dayan reasoned that the entire Egyptian defense would collapse once Israeli units had penetrated the Sinai and cut the Egyptian lines of communications. The Gaza strip was not to be assaulted until operations in the Sinai had been successful. The fact that the Gaza Strip lying next to Israel was not attacked at the outbreak of the war further helped to confuse the Egyptians. This was a deliberate reversal to what would seem to be the logical order of military objectives.

Actual military operations took less than 72 hours. The outstanding achievement had been the advance of the 7th Armored

Brigade which went into action ahead of schedule, against orders, and succeeded in quickly rupturing the Egyptian defenses which were holding up Israeli infantry assaults on the central axis at Abu Agheila. Following this success the 7th rapidly thrust west toward the canal and in a single day of non-stop advance seized most of the central Sinai and sealed the fate of Egyptian forces. At the end of the campaign Israel had conquered an area roughly five times its size and routed the equivalent of two Egyptian divisions at the cost of less than 170 killed.

LESSONS

The most immediate result of the war was vindication of the armor oriented doctrine. The motorized infantry had not been able to penetrate the Egyptian defenses as planned. It was the 7th Armored Brigade which broke through the Egyptian defenses and raced toward the canal in the central sector. The 27th Armored brigade had also played a vital though not as spectacular a role in the northern sector. Armor had demonstrated its capabilities and Moshe Dayan switched to support the mobile armor battle concept with enthusiasm. A rapid expansion of the Armor Corps began which included purchasing more and better tanks as well as upgrading existing ones. Also a number of senior and respected infantry officers were reassigned to the Armor Corps to include Colonel (later General) Israel Tal who also later became Chief of Armor and led the development of Israel's Merkava tank (fielded in 1978). Overall, the 1956 war marked the transition of the IDF from an infantry to a mechanized/armor oriented army.³

An issue prior to the war which had concerned Israeli planners was whether or not the reserve forces would be able to function at a sufficiently high level. This was settled. Only two of the nine brigades employed on the Sinai front were active brigades. Furthermore, because of the need for secrecy, mobilization had been delayed until the last possible moment. Reservists were therefore sent into combat only two days after their recall with no time for any pre-combat refresher training. The post war analysis revealed that only two reserve brigades failed to achieve their objectives. The conclusion was that the problem in these brigades was not one of fighting qualities of the soldiers but rather it was the officer leadership that had failed. The officers in these brigades were deemed, in general, to be deficient in combat spirit and lacking in elementary tactical skills. The conclusion was that the key to good performance of the reserve brigades was the quality of the officer leadership.⁴

Along with this was the vindication of the overall leadership doctrine that officer's commanded from the front. The IDF though paid handsomely for this in that half the casualties had been officers.

As following the War of Independence, the Army's leaders were not deluded by the spectacular victory, but candidly addressed a number of errors and organizational shortcomings revealed by the campaign. In addition to a less than satisfactory materiel mobilization for the war, the overall logistical system had proven weak. Only a host of improvisations during the short campaign prevented this from having a serious

negative impact on operations. Upgrading the logistical structure to include provisions for maintenance support close to the battle was aggressively pursued after the war.

Artillery was evaluated as not being mobile enough to keep up with rapid rates of advance.

Communications and command and control of combat operations at the divisional and front levels had not been satisfactory. The brigades were often out of communication with each other and with their higher headquarters. Because of this it was recognized forces could not have been concentrated quickly had there been a major counterattack. The need was identified for a system of command and control of combat operations which left the power of immediate decision with commanders in the field but at the same time allowed divisional and frontal headquarters to control and guide operations in light of the broader picture for exploitation of strategic opportunities and avoidance of dangers which lie beyond the scope of the field commanders. This led to a unique command and control doctrine known as "optional control" which will be discussed later.

Finally, coordination between the Air Force and ground elements was rated as poor.

Overall, the major lessons had been at the tactical and operational level. At the strategic level the concepts of a powerful reserve army trained and organized into mobile striking forces which could mount attacks from interior lines of communication had all been validated. And the changes in tactics and combat techniques were only minor.

In many ways the Sinai War of 1956 served as a dress rehearsal for the Six-Day War of 1967.

CHAPTER IV

ENDNOTES

1. Gunther Rothenberg, The Anatomy of the Israeli Army, p. 101.
2. E. Luttwak and D. Horowitz, The Israeli Army, pp. 131-132.
3. Ibid., pp. 150-151.
4. Ibid., p. 150.

CHAPTER V

THE 1967 WAR

ORGANIZATION AND EQUIPMENT

After the 1956 War, the emphasis in fighting doctrine was placed on mobility. The armored brigades received priority at the expense of infantry. No standard brigade organization was developed. However, the typical armor brigade was composed of five tank battalions with 50 tanks each, a halftrack mounted infantry battalion, an artillery regiment, and a reconnaissance company. Variation within the infantry brigades was even greater and they were last in terms of resource allocations. The mechanized infantry was equipped with obsolete US M-3 Halftracks which were generally armed with a heavy and light machine gun and carried 10 - 12 soldiers. The standard infantry weapon had been upgraded from a bolt action rifle to either a modern semi-automatic rifle or an Israeli manufactured sub-machine gun.

The total number of tanks in the Israeli forces was now about 800. Of these 250 were Centurions, 200 M-48's, 200 modified and upgunned "Super Shermans", and 150 obsolete AMX-13's.

Fire support from the artillery was provided by Israeli manufactured 120mm and 160mm mortars as well as 105mm howitzers mounted on AMX-13 and 155mm howitzers mounted on Sherman chassis. Overall the artillery was technically proficient but antiquated and of insufficient quantity.

No definitive source has been published concerning the exact number and type of brigades that were mobilized and employed during the 1967 war. Consensus places the number below 25. Eight of these were considered armored brigades. Four were elite parachute infantry and another 10 - 12 were standard infantry. The parachute infantry was also mounted on M-3 halftracks.

The Israeli Air Force consisted of a total of 199 strike aircraft with 72 Mirage III-C's, 22 Super Mysteres, 40 sub-sonic Mysteres IV, 40 obsolete Ouragans, and 25 Vautour II light bombers.

The outbreak of the war had caught the IAF in an equipment upgrade program. They were converting to aircraft that could carry a greater bomb load. 50 Mirage V's and 48 Skyhawks had been ordered from France and the United States respectively.¹ The Skyhawks were delivered after the war but the Mirage buy fell through as French policy shifted to a pro Arab stance after the war.

Overall, the quantitative balance of forces favored the Arab states. Egypt alone possessed over 900 tanks, 900 artillery pieces excluding mortars, and 385 combat aircraft of which 125 were Mig 21 fighters. Combined, the front line states of Egypt, Syria, and Jordan mustered over a quarter million soldiers, 1700 tanks, 1300 artillery pieces and 500 aircraft.

DOCTRINE/TACTICS

The eleven years of peace between 1956 and 1967 saw no change in the basic military strategy of Israel. It continued to be based on offensive action carried into enemy territory as

quickly as possible for rapid termination of hostilities on the enemy's territory. The organization and fighting doctrine of the Israeli Defense Forces were both reshaped to better enable them to carry out the tenets of this doctrine.

The lessons from the 1956 war had vindicated the armor enthusiasts over the mobile infantry proponents. The army leadership viewed tanks, organized in armored strike forces, as being the key to success, especially in open desert warfare. The result was that the Armored Corps was rapidly expanded at the expense of the other elements of the ground forces. Under General Israel Tal who became head of the Armored Corps in 1964, armor doctrine called for heavily armored tanks which could withstand a substantial amount of enemy fire before being stopped. Tal felt the true mobility of heavily armored tanks came from their ability to move in the presence of enemy fire.² Such tanks would fight in concentrated wedges which would simply overwhelm the enemy. Massed formations of heavily armored tanks were thought not to require infantry escort or support when fighting in open terrain. The lack of natural cover in the desert would make it difficult for an enemy to employ anti-tank weapons effectively. Israeli tank crews, highly trained in gunnery, were taught to engage and destroy anti-tank positions at long ranges before the anti-tank fire could be massed against the tanks at closer ranges.

This doctrine for employment of armor ran counter to the standard practice of armor-infantry cooperation which stressed that infantry was needed to protect tanks from bazookas,

recoilless rifles, and anti-tank missiles. In strictly financial terms the emphasis on armor allowed the Israelis not to concern themselves with the need for a better infantry carrier since infantry was not expected to accompany the leading armor assault. Therefore more funds could be devoted to modernization of the existing tank inventory and the purchase of new tanks. The net result was that infantry was relegated to a secondary task of mopping up after an armor attack.

Within the armored corps Tal is credited with introducing much needed standardized maintenance checks and procedures for tank crews. He acknowledged that the crews could not be expected to perform as mechanics. However, by use of a prescribed set of checks and minor repairs by crews, much preventive maintenance could be accomplished which would result in a greater operational ready rate and fewer breakdowns during operations than had occurred during the 1956 war. The emphasis on operator maintenance along with an upgrading of the Ordnance Corps was undertaken specifically to avoid repetition of what happened to General Sharon's column in the 1956 War when it lost one-half of its vehicles to mechanical breakdowns while crossing the desert.

The basic unit for the conduct of operations remained the brigade. Although they differed in the composition of forces, they were all structured to be able to conduct independent operations for a specified period of time.³ While the brigade remained the primary fighting force, the divisional size task force which had been introduced in 1956 (called "Ugda" in Hebrew) became the planning and operational headquarters for the control of operations. The "Ugda" was a flexible grouping of brigades

for command and control. It resembled more closely a US Corps in that it included only the required number of maneuver brigades for the completion of a specific assigned task.

The doctrine of optional control for command and control during operations was now firmly established. It was ideally suited for fast paced and fluid mobile combat. Battalion and brigade commanders had complete authority to make tactical decisions during the course of a battle. Optional control took into account the inevitable fog of battle and the friction of war. Commanders were taught to expect plans to break down. But, this should not be cause for them to halt and request instructions or new orders. Based on their evaluation of the situation and adhering to the principle of maintenance of the objective they should make the necessary adjustments, press on, and report. In other words they would overcome the confusion of battle by making on the spot adjustments within the constraints of accomplishing the assigned mission.⁴ Senior commanders at divisional task force and higher level would interfere only to give directions as required based on their knowledge of the broader situation. The Israeli's fully realized this method demanded commanders who would report accurately and were not hesitant to make decisions without waiting for guidance or approval from higher headquarters. Combining the doctrine of optional control with the principle of maintenance of the objective produced maximum flexibility in all respects except for the objectives themselves. The Israeli's taught that prepared plans were simply the basis for change once operations commenced.

Another lesson that had been learned was that mechanized operations required an effective resupply system. To accomplish this the "push" doctrine of resupply was adopted which continually sends forward the critical combat supplies of fuel and ammunition along the major lines of advance without waiting for requisitions from the fighting elements. The goal was to accomplish resupply as soon as a fighting unit halted.

While the major weapons systems for the ground forces such as tanks and artillery were generally purchased second hand and reconditioned, a conscious decision had been made to equip the air force with modern first line fighters. Initially these were purchased from France because it was the only country that would sell modern jet aircraft to Israel. The pilots for the Israeli air force were also the cream of the crop. Israeli air combat doctrine placed a premium on pilot skills. In contrast to other modern air forces which emphasized aerial combat using missiles outside the cannon range of opposing aircraft, the Israeli's felt most air to air duels would still be "dogfights" at slow speeds since even pilots of supersonic fighters would have to slow down to identify their targets and guide their aircraft against them. This is where flying and gunnery skills with cannon and machine guns would determine the victor.

LESSONS

The 1967 war ended up being fought on all three fronts. Since Egypt was considered the most dangerous enemy, it received priority in Israel's strategic deployment. Within the Southern

Command three division size task forces were established for operations in the Sinai:

a. Task Force Tal of two armored brigades and a parachute infantry brigade attacked along the northern coastal route through the Sinai.

b. Task Force Yoffe with two armored brigades attacked just south of Tal's main effort in an area that was considered impassable terrain by the Egyptians.

c. Task Force Sharon, the most balanced of the three consisting of an armored brigade, an airborne brigade and an infantry brigade supported by a large portion of the mobile artillery attacked along the southern route across the Sinai.

The overall aim was to quickly smash through the Egyptian defensive positions in the Sinai then race to blocking positions in depth thereby trapping Egyptian forces and destroying them by a combination of air and ground action. The Egyptians had deployed seven divisions in the Sinai along Soviet doctrinal lines. Three infantry divisions occupied defensive belts covering the trans-Sinai routes. There were an additional two infantry divisions to secure the flanks, one on the north and one on the south. To the west of this defensive area were two armored divisions positioned to counterattack as soon as the Israeli attack was stopped by the forward defenses.

In a series of bold attacks along each route the Israeli's quickly broke through the Egyptian defenses, then secured the approaches to the Gidi and Mitla passes thereby cutting off the Egyptian forces in the eastern Sinai. By noon of six June, the

second day of the war, the issue on the ground in the Sinai had been decided.

The air battle had been even more decisive. Israel's preemptive strike beginning at 0745 hours on 5 June destroyed first the Egyptian Air Force on the ground then the Syrian and finally the Jordanian air forces. These strikes were so successful in eliminating any threat from the Arab air forces that by afternoon of 5 June, some first line Israeli fighter aircraft were redirected from air superiority missions to supporting ground operations. The combined Arab losses totaled 374 aircraft to 19 of Israel's.⁵ The proficiency of the Israeli Air Force and the correctness of its fighting doctrine was amply demonstrated. The bulk of the Arab aircraft were destroyed by accurate cannon fire while they were on the ground. Each pilot had been allowed only three passes over a target after which they had to return to base, refuel, rearm and then proceed to another mission.

Prior to the war it was hoped that Jordan would not become involved in the conflict. However, in response to unexpected Jordanian action on 5 June the Israeli's quickly mounted an offensive which resulted in the capture of all of the west bank of the Jordan River by 8 June. The outcome was determined so quickly that an Iraqi contingent which had arrived in Jordan to assist in a Jordanian attack on Israel had no chance to get into the action.

With Egypt and Jordan out of the action the Israeli's decided to seize the opportunity to take the Golan Heights from Syria from which Israeli settlements in the upper Galilee had

repeatedly been shelled since 1949. The attack was launched on 9 June and pressed home with dogged infantry assaults up the steep slopes. The heights had to be captured quickly before an effective cease fire could be imposed by outside powers. The war ended on 10 June with Israeli ground forces only 30 kilometers from Damascus.

The overall margin of victory in the war was astonishing. Within the space of six days, Israel had conquered 26,000 square miles of territory, inflicted 15,000 casualties on the Arabs and taken 12,000 prisoners. Arab equipment losses included 1,000 tanks and 452 planes. The cost to the Israeli's had been 759 dead and 2563 wounded.

Israeli operations had been marked by surprise and mobility. However, there was no uniformity in the tactics employed. On the Sinai front, each of the three divisional task forces used different means yet each was successful. General Tal's division employed massed armor attacks to overwhelm the Egyptian defenses. General Yoffe's division attacked along what was considered impassable terrain and struck the Egyptians on a vulnerable flank. General Sharon fought a carefully planned set-piece battle which combined all arms in a sophisticated coordinated attack the likes of which had not been seen before in the IDF.

Overall though, the use of infantry had been limited. Except for the Golani Brigade on the northern front and the paratroop brigade which captured Jerusalem, no infantry unit was given an independent role. They were used to mop up behind armored attacks. The example to be emulated was that of Tal's

division which had broken through the Egyptian defenses without infantry support and then sped west to seal off the Sinai. The doctrine for employment of infantry came to be one of using mechanized forces to follow armor, hold open the breaches made by tanks to permit passage of softer skinned vehicles, and then resume following the armored formations once relieved by motorized infantry following last in trucks and buses.

The war served to accelerate the loss of stature of infantry as a fighting arm. Now they were clearly subordinated to the armored forces. The Armored Corps and the Air Force on the other hand enjoyed a greater prestige than ever and continued to receive resource priority. The next two Israeli Chief's of Staff following the war came from the Armored Corps.

The war had again vindicated the aggressive, up-front leadership doctrine. In a study of the critical combat actions in the war the Israeli's concluded the principal reason for success in each case was the strong leadership of unit commanders who led by example and maintained the momentum of the attack even when things seemed to be going poorly. According to standing orders, units continued to fight and advance toward their objectives even when contact with adjacent units was lost. The price in human terms exacted by this aggressive leadership doctrine was great as a disproportionate number of the casualties had been officers.

Finally, the war answered another pre-war debated issue regarding manpower. Some had felt the relative quality of manpower in the armed forces would become less important as weapons became "smarter". The war clearly showed that rather

than becoming less important, Israel's qualitative manpower superiority had, in fact, been the decisive edge when facing Arab forces with equipment every bit as good as that employed by the Israeli's.

CHAPTER V

ENDNOTES

1. Gideon Avidor, "From Brigade to Division," Military Review, (March 1982), p. 65.
2. E. Luttwak and D. Horowitz, The Israeli Army, p. 173.
3. Ibid., pp. 218-222.
4. Ibid., p. 173.
5. Gunther Rothenberg, The Anatomy of the Israeli Army, p. 136.

CHAPTER VI

THE WAR OF ATTRITION

SUMMARY

The fourth war between Israel and Egypt which lasted for eighteen months, from March 1969 to August 1970, was a major confrontation which differed significantly from the previous Arab-Israeli wars in its duration, the fact that the Soviet Union intervened directly with military forces, and that no clear cut decision was reached at the end.

The Israelis were unable to transform their smashing military victory of 1967 into a political settlement with the Arabs. As disconcerting as the continuing belligerence was, most took comfort in the much improved geostrategic position of Israel. The new borders held by the IDF which rested on the Suez Canal, the Golan Heights and the Jordan River were significantly shorter and much more defensible.¹

Possession of the Sinai provided a broad protective barrier of desert guarded by the Suez Canal on the west, an ideal anti-tank obstacle. By establishing radar sites and forward airfields in the Sinai, the Israelis were also able to get better early warning and reduce the flying time of their aircraft to Egypt's vital centers.

Moving Israel's eastern border to the banks of the Jordan River tripled the width of the heretofore dangerously narrow middle part of the country.

Possession of the Golan heights denied the Syrians direct observation into the northern Galilee and ended the harassing artillery fire from that area which had plagued Israel since independence.

Overall, the much improved situation led Defense Minister Moshe Dayan to publicly predict that there would be no Arab military threat for ten to fifteen years.

However, as early as 1968, increased Palestinian terrorist activity directed against Israel began to spill over into clashes with Syrian and Jordanian regular forces. Then suddenly, in September 1968, the Egyptians unleashed an artillery bombardment campaign from positions on the west bank of the canal against Israeli positions on the eastern bank of the Suez Canal.

The Egyptian decision to use military action to put pressure on Israel to withdraw from the Sinai was made possible by the Soviet Union's rapid replacement of equipment lost in the Six Day War. The Soviets not only made up for what the Egyptians had lost, the new equipment they supplied was first rate, particularly the air defense systems. In terms of major land combat systems, such as tanks and artillery, the Egyptians even evaluated themselves as being in a superior equipment posture to Israel. However, they felt any military action against Israel had to remain limited in scale because superiority in the air could not be achieved. The Israeli Air Force was rated as being stronger than the combined air assets of all the Arab states. Therefore the Egyptians planned limited military action along the canal front where they hoped to neutralize the Israeli air superiority by installation of a dense air defense system.²

The Israeli response to Egyptian artillery attacks on Israeli positions along the eastern bank of the canal was to construct fortifications to protect troops from the shelling. The Israelis also responded by conducting retaliatory punitive air raids within Egypt. The success of the Israeli raids led President Nasser to conclude that Egypt was still not properly prepared to conduct even limited military operations against Israel along the canal front and he thereby postponed further attacks to allow more time to build up Egypt's air defenses to guard against retaliatory strikes.

By March of 1969 Nasser again felt ready. The Egyptian Army had constructed several continuous lines of fortifications along the canal. In these they deployed hundreds of heavy guns and howitzers, all covered by a network of SAM-2 missiles and anti-aircraft guns. On March 8, 1969, the date which the Israelis give for the beginning of the fourth Arab-Israeli War, the War of Attrition, the Egyptians unleashed an unusually heavy artillery barrage on Israeli positions. Egypt's military objectives included crossing the Canal at some point in time to seize a foothold on the eastern side and then fight a defensive battle to attrit Israeli strength in a static confrontation. The Egyptians felt an extended inconclusive military confrontation (a battle of attrition) in the western Sinai would create political pressures within Israel that would end in an eventual Israeli withdrawal from the occupied Sinai.³

The artillery battle along the canal begun on March 8, 1969 was an unequal contest. The Israelis were clearly outgunned by

Egyptian artillery. Because of Soviet support for Egypt, Israel felt constrained from crossing the canal with ground forces to simply take out the artillery with ground action, a course of action more in keeping with her offensive orientation. Instead, a decision was made to use the Israeli Air Force to strike back against the Egyptian positions on the canal. By the end of July 1969, the Israeli Air Force had neutralized the bulk of the Egyptian air defense system and had again gained air superiority over the canal. The Israeli military now strongly recommended that ground forces cross the canal to destroy the Egyptian defensive positions on the western side of the canal. Although it was the correct military solution to end the War of Attrition, for political reasons again, the crossing was not permitted. Therefore the war continued with the Egyptians maintaining their goal of wearing down Israeli strength along the canal.

The War of Attrition confronted the IDF with military problems it had been able to ignore since the War of Independence. The almost automatic Israeli military response to Arab aggression had always been offensive action on Arab territory. However now, with Israeli positions already well forward on Arab territory in the Sinai, the IDF's primary military response was defensive. For the first time in three wars the IDF fought from a static defensive line which came to be known as the Bar-Lev line, after the then serving Chief of Staff. The controversy surrounding the construction of the Bar-Lev line illustrates the difficulty the IDF had in developing an effective military strategy for fighting the War of Attrition.⁴

The original plans for defensive positions along the canal called only for protective shelters for observation positions. These were to be positioned about seven miles apart and manned by no more than a platoon of infantry supported by two to three tanks. Mobile forces would patrol the gaps between the static look-out positions. Clearly the defensive positions along the canal were not meant to serve as the principal defensive line for the Sinai. However, as soon as construction of the observation positions began, they were given an increased role. From look-out positions they began to be referred to and viewed as strong points. Soon new access roads to these positions were constructed along with firing ramps for tanks. Some miles back a "switch road" running parallel to the canal was constructed to permit rapid movement of reinforcements and artillery to threatened areas. The Bar-Lev line was now viewed by a substantial portion of the Israeli high command as being strong enough to delay any Egyptian crossing attempt long enough to permit moving up Israeli reserves.

General Tal, the Israeli Chief of Armor and General Sharon, commander of an armored division voiced their opinion however that these defensive positions would be of little use in defending the canal line. They argued that the fortifications lacked sufficient firepower, were not mutually supporting, and could be isolated and by-passed. They stated a mobile defense of the Sinai would be much more effective. This would be based on armored units held in depth which could move rapidly forward and destroy any Egyptian forces which had crossed by counterattacking them. A fear voiced by many officers in the IDF was that

adopting a static defense would begin to erode the army's vital offensive spirit.

In the end, a compromise solution was adopted. A fortified line along the canal was constructed. It was not a continuous line but consisted of thirty-one fortified positions linked by a road. Patrols were conducted between positions and mobile units were positioned in depth to respond to any point along the canal. Overall, only a few thousand soldiers were stationed along the canal itself. Both within and outside of Israel though, the Bar-Lev line was viewed as an extremely strong defensive position.

As mentioned, to redress the unequal balance of forces along the canal in which the Israelis were at a serious disadvantage in artillery, the Israeli Air Force initiated a highly successful aerial campaign. Its purpose was twofold. Strategically damage was inflicted on targets deep within Egypt to discredit the Nasser regime's ability to defend the homeland. To get Israel to stop these aerial attacks it was thought Egypt would be forced to agree to a cease fire along the canal. Operationally, commitment of the Air Force was designed to cause Egypt to disperse her massive military concentration along the west bank of the canal, to destroy the newly emplaced anti-aircraft system along the canal, and to keep air corridors open for the strategic raids into Egypt.⁵

By December 1969 the Israeli Air force had established absolute air supremacy over the canal and had counterbalanced Israel's inferiority in artillery. However, Israeli strategy had failed to force a cease fire on Egypt. Therefore, to further

bring pressure on President Nasser to end the war, aerial penetration raids focusing on Cairo and the Nile Delta were stepped up in January 1970. These deep strikes were made possible, in part, by the arrival in Israel of US F-4 Phantom jets. The F-4, with its large bomb load, its capability in aerial combat, its long range, and sophisticated electronics package altered the balance to such a degree that President Nasser appealed to the Soviet Union for help. The result was direct Soviet military intervention to stop the Israeli air campaign against targets deep within Egypt.

Gradually the Soviets took over from the Egyptians the responsibility for air defense of Egyptian territory. Sophisticated SAM-3 missiles were airlifted to Egypt and set up and manned by Soviet crews. New radar sites were established and anti-aircraft guns, all with Soviet crews were deployed. Then came three Soviet MIG-21 fighter squadrons. By summer of 1970 the Soviet presence in Egypt had grown to 15,000.⁶ Soviet manned anti-aircraft missile batteries now defended Alexandria, Cairo, and the Aswan Dam. This forced Israel to stop its deep penetration raids.

By July 1970 Soviet pilots began to fly missions as far east as the canal. Inevitably an aerial engagement between the Israeli's and the Russians took place resulting in five Soviet MIG's shot down. Both sides now feared greater escalation and a cease fire was agreed to commencing on 7 August 1970 thereby ending the eighteen month long War of Attrition. The provisions of the cease fire precluded reinforcing the line of the canal by both sides. This was ignored by the Egyptians who quickly

replaced and improved the air defense network that had been taken out by the Israeli Air Force. The Israelis complained about the violation but refused to take military action to deal with the problem. The result was that during the three years between the end of the War of Attrition and the beginning of the October 1973 war, the Egyptians, with Soviet assistance, built an air defense system along the canal which constituted the densest concentration of anti-aircraft missiles and guns in the world.

LESSONS

Unlike in the previous Arab-Israeli conflicts, in the War of Attrition no clear cut military decision had been reached. Both sides could view the outcome as having been in their favor. The Israelis could measure success in having prevented any Egyptian gains on the ground and having reestablished a cease fire. Egypt could point to a clearly altered strategic balance from that which followed their defeat in 1967. In President Nasser's words the War of Attrition showed "the increased ability of our armed forces to strike back; the second was the increased Soviet political and military backing given us."⁷

A major result of the Israeli view that they had "won" the War of Attrition was vindication to many of the post 1967 defensive military doctrine and the belief that the Bar-Lev line had been effective as a static defensive barrier. Strategically this further removed the possibility of an Israeli preventive strike or war and gained further acceptance of being able to take an Arab first blow should war come again. Tactically it meant

that Israel ignored the more obvious facts arising out of the War of Attrition. The very reason Egypt had been able to initiate a war of attrition was because of the proximity of the Bar-Lev positions to the canal. Secondly, the dense anti-aircraft system installed along the canal would neutralize, at least for a time, Israeli air superiority and therefore make it difficult to support the Bar-Lev line should the Egyptians attempt to cross the canal.

Egypt used the period prior to the 1973 war to perfect its anti-aircraft system along the canal. When completed it was able to protect not only forces west of the canal but it also extended to a distance of twenty kilometers east of the canal thus meeting the principal pre-condition for a crossing attempt.⁸ However, Israeli planners saw future hostilities merely in terms of another round in the War of Attrition and based their plans to meet the challenge on this assumption.

CHAPTER VI

ENDNOTES

1. E. Luttwak and D. Horowitz, The Israeli Army, p. 299.
2. Bar-Simon Tov, The Israeli-Egyptian War of Attrition,
p. 44.
3. Ibid., p. 53.
4. Gunther Rothenberg, The Anatomy of the Israeli Army,
p. 187.
5. Bar-Simon Tov, p. 200.
6. Ze'ev Schiff, A History of the Israeli Army, p. 187.
7. Bar-Simon Tov, p. 200.
8. Ibid., p. 202.

CHAPTER VII

THE YOM KIPPUR WAR

ORGANIZATION AND EQUIPMENT

One of the results of the Israeli victory of 1967 was a grossly inflated impression of their own power which served to provide a false security against another Arab attack. The War of Attrition wrongly reinforced this perception. The cease fire was perceived to have been imposed by Israeli air power which further served to discount Arab military strength. The major concern growing out of the War of Attrition was avoidance of an Israeli-Russian confrontation.

In 1972 Israeli Defense Minister Moshe Dayan labeled Israel as the second most powerful state in the Mediterranean basin after France. In July 1973 General Sharon, who had just retired from the army after commanding the critical southern front facing Egypt, stated Israel had the military power to conquer, within one week, the entire area stretching from Khartoum, to Baghdad, to Algeria. It is little wonder that Arab intentions of initiating another round in the military conflict were discounted.

The indications of Egyptian preparations for war in 1973 did not go unnoticed. However, by summer of 1973 the Israeli high command had become captive to its preconceived notions. This was reinforced by the Israeli analysis that the Egyptians themselves had ruled out military action until they had the capability of neutralizing the Israeli Air Force. In 1973 the Egyptians simply

did not possess what the Israelis postulated as being necessary to take on the Israeli Air Force; a sufficient quantity of modern fighters, fighter bombers, and medium bombers which could simultaneously attack all Israeli air bases.¹

For the Egyptians however, the War of Attrition had suggested another solution to the problem of neutralizing the Israeli Air Force, at least over selected parts of the battlefield. The solution was to create an anti-aircraft umbrella by a dense massing and mixing of numerous anti-aircraft systems which would provide redundant coverage and negate the effectiveness of Israeli electronic countermeasures against any single system.

The Soviets provided such a system to both Egypt and Syria which combined low, medium, and high altitude missiles with radar controlled anti-aircraft guns. To deter the threat of Israeli air strikes deep into Egypt as had happened during the War of Attrition the Soviets supplied SCUD surface to surface missiles which could retaliate for such strikes and thereby hopefully deter Israel from these types of raids.² Thus, unknown to the Israelis, the Arabs had found a way to neutralize the Israeli air advantage.

On the eve of the attack the strength of the Egyptian Army deployed along the canal included some 300,000 troops, 1600 tanks, 1850 artillery pieces, and 62 SAM batteries. The Egyptian Army attacked with five infantry divisions which included five organic and two independent tank brigades in the first echelon, with the follow-on echelon consisting of two armored and one mechanized division.

On the northern front the Syrians had 190,000 troops, 1500 tanks, 600 artillery pieces, and 38 SAM batteries. These were arrayed in three infantry divisions which included five tank and two mechanized brigades in the first echelon followed by two armored divisions plus one independent tank brigade in the second echelon.

All of the IDF's war plans were based on intelligence being able to provide at least 48 hours warning prior to war. This was the minimum time needed for mobilization. The decision for mobilization of reserve forces was not made until the morning of 6 October, less than 10 hours before the attack. Therefore, when the attack came at 1400 hours, IDF strength in the Sinai consisted of only two reduced infantry battalions manning the Bar-Lev "strong points" along the canal and about 300 tanks, partly in the forward zone, but mainly under the command of Armored Forces Sinai Headquarters far to the east of the Sinai passes. In the north the Syrian front was defended by two Israeli infantry battalions under the command of an Area Brigade headquarters, plus two armored brigades totaling about 180 tanks.

When fully mobilized the IDF could field over 300,000 troops, 2000 tanks, and 900 guns and heavy mortars. Organizationally this consisted of 17 brigade equivalents of armor, three airborne brigades, a few first line infantry brigades such as the Golani, and the remaining infantry which utilized conscripted civilian buses and trucks for transportation.

The major organizational change since 1967 was that the division or "ugda" had become the basic fighting element with a

permanent structure under which the brigades were assigned and operated in peacetime as well as war. Only the elite brigades and a few General Headquarters formations remained independent.

These divisions however were almost exclusively armored formations. The armored brigades within the divisions included a mechanized infantry battalion but these had not been as well resourced as the tank battalions and therefore lacked proper equipment and did not have as high a quality manpower. The mechanized infantry was still predominantly mounted in the obsolete M3 halftrack which lacked the cross country trafficability necessary to keep up with tanks.

While quantitatively inferior in all categories the Israelis enjoyed a qualitative equipment superiority in their tanks, all of which had been upgraded and fitted with the excellent 105 mm high velocity cannon which fired both Armor Piercing Discarding Sabot (APDS) and High Explosive Anti-Tank (HEAT) ammunition for tank to tank combat. This was a significant advantage over the bulk of the Arab tanks which were T-54 and T-55 models whose only armor defeating round for their 100 mm cannon was the older Armor Piercing (AP) round. The 115 mm cannon mounted on the T-62's did have an excellent Armor Piercing Fin Stabilized Discarding Sabot (APFSDS) round. But there simply weren't enough T-62's available to make a noticeable impact on the tank battles. The Israeli army's qualitative advantage in tanks combined with the superior gunnery skills of their crews helped to produce the lopsided exchange ratios in the tank to tank battles.

In the other two components of the ground combined arms team, artillery and infantry, the Arabs enjoyed both an equipment

quantitative and qualitative advantage. Certainly the Arab infantry was better equipped for fighting tanks with large quantities of the SAGGER anti-tank missile and the ruggedly effective RPG-7. Israeli infantry still relied on obsolete US manufactured World War II "bazookas" along with some recoilless rifles and few relatively old French manufactured anti-tank missiles. Israeli artillery simply could not match what had been provided in artillery by the Soviets to the Arabs. Of course close air support, or the flying artillery concept, was expected to compensate for the recognized inferiority in artillery.

DOCTRINE/TACTICS

After the 1967 victory the "all tank doctrine" which had been advocated by the Armor Corps was accepted throughout the Israeli Army. Combined arms training received less and less emphasis as the focus shifted to armored movement in unit training and tank gunnery skills in individual and crew training.

The "all tank doctrine" stressed the independent and self-reliant role of massed tank forces. Tanks were to be concentrated along narrow fronts to achieve deep rather than broad penetrations. By constant forward movement and accurate cannon fire they would cut through enemy defenses and simply pull the rest of the army with them. The principal job left to the infantry was to "mop up" what resistance remained after the massed armor had shattered the enemy. Inherent in this doctrine was the assumption that the Israelis would always be on the offensive.³ The concept of the self-sufficiency of tanks also led to the elimination within tank battalions of organic mortars.

COURSE OF THE FIGHTING

The Yom Kippur War was the first conflict the Arabs had planned thoroughly. They set the date of the war and enjoyed the advantages of both surprise and initiative.

The Syrians on the Golan front attacked with a first echelon of three divisions and several independent brigades. The combined total of tanks in this attack echelon was over 1,000. The first echelon was to penetrate to a depth of six miles and then pass through the second echelon consisting of two armored divisions which would seize crossings over the Jordan River thereby exposing the northern Galilee to attack.⁴

The Egyptians attacked across the Suez Canal on the Sinai front with five infantry divisions in the first echelon. Lead elements of these divisions crossed the canal on hundreds of small boats. Once across some of the infantry engaged Israeli positions on the Bar-Lev line while more penetrated into the desert to begin establishing an anti-tank defense based on a dense SAGGER missile screen and RPG-7's for close in defense. Its purpose was to defeat the expected Israeli armored counterattack which would attempt to destroy the crossing sites and restore the canal position. By nine o'clock in the evening of 6 October, some seven hours after the attack began, the Egyptians had 40,000 infantry on the eastern side of the canal, the first bridge was completed, the first Israeli armored counterattacks by units stationed in the Sinai had been defeated, and the Israeli Air Force had lost over 20 aircraft to SAM missiles while trying to interdict the Egyptian crossing. The

armored counterattacks, on which the Israeli defense plan rested failed because the tanks, unsupported by artillery, infantry, or the air, could not penetrate the dense Egyptian anti-tank missile screen. The lack of infantry and artillery to support the assault against the Egyptian lines was further aggravated by the fact that the Israeli tanks carried mainly anti-tank ammunition for their cannons. High Explosive (HE) shells needed to fight against dug-in infantry were not available in quantity until the 3rd day of fighting.

Because of the critical situation on the Golan front on the morning of 7 October Israeli Air Force was diverted from the Sinai Front. The loss of air support and the lack of success of Israeli armor in the afternoon and night of 6 October caused the Israeli command to stop its attempts at restoring the Bar-Lev line. The artillery switch road, 10 miles east of the canal became the new Israeli main defensive position in the Sinai as focus shifted to the northern front.

Of the two Israeli armored brigades fighting on the Golan, the 7th, in the northern sector, had suffered heavy losses through the night of 6 October but had maintained its integrity as a formation. In the southern half of the Golan the weaker 188th Armored Brigade which began with only 77 tanks was being overwhelmed by the assault of over 450 Syrian tanks supported by a heavy concentration of artillery. By the morning of 7 October only 15 scattered tanks remained in the 188th Brigade and they were no longer fighting a coordinated defense. The situation looked so grave to Defense Minister Moshe Dayan that he

recommended an Israeli withdrawal to the western slopes of the Golan. This was rejected but the seriousness of the situation precipitated the concentration of the Israeli Air Force in the north to assist in stopping the Syrians. All morning of 7 October the IAF made attacks and suffered heavy losses to missiles and radar controlled guns while trying to stem the Syrian armor. From the rear hastily assembled reserves were sent to the Golan in ad hoc platoons, without regard to organizational integrity. By mid day of 7 October, sufficient elements of one reserve armored division had arrived on the southern portion of the Golan to relieve the shattered 188th Armored Brigade and the situation began to stabilize even though the Syrians reached their deepest penetration, 11 miles from the Sea of Galilee, around one in the afternoon.

By evening of 7 October the crisis on the Golan passed as a second reserve armored division began arriving.⁵

During the first few days of the war, decisions by the Israeli high command were strongly influenced by the shortage of reserve forces which were still mobilizing. A key issue was where to send the reserves as they became ready. This was compounded by the realization that Jordan could, at any time, open a third front in the war by attacking from the east. Should some reserves be kept to deal with that possibility? The decision was made to give priority to the Syrian front because Arab success there would immediately endanger populated areas in northern Israel. And, it was also felt that with a concentration of effort the Syrians could be defeated quickly which would then permit a total effort against the stronger Egyptians.⁶

By noon on 8 October the Israelis began their counterattack against the Syrians. There was heavy fighting on the 9th but by the afternoon of 10 October, almost exactly four days after the beginning of the war the Syrians had been driven east of the line from which they had launched their attack. They left behind them 867 tanks and hundreds of other military vehicles. During the night of 10 October the Israeli high command decided to attack deeper into Syria to completely remove any immediate threat from the Syrian Army after which full attention could be given to the Egyptian front. As the counterattack into Syria began on 11 October, Iraqi, Jordanian, and Moroccan forces joined Syrian forces attempting to stop the Israeli advance. Each of these forces were, in-turn, defeated.

As the Israeli attack into Syria began to place an increasing strain on Syria, President Assad appealed for a resumption of offensive operations by the Egyptian forces in the Sinai to draw off Israeli resources. Following their initial successes, the Egyptians had penetrated the Sinai to a depth of 10 miles and then remained there, going on the defensive under the protection of its air defense umbrella.

By the middle of 8 October, substantial elements of two Israeli reserve armored divisions had reached the Sinai front. Because priority had been given to tank movement, these divisions arrived without most of their mechanized infantry and artillery. Almost immediately a counterattack was launched on the 8th of October but the Israeli armored assault, again without infantry support and inadequate indirect fire support, failed with heavy

losses. The defeat of this division-size counterattack caused the Israeli high command to temporarily suspend further offensive operations in the Sinai while reassessing the situation. It was during this pause that a reconnaissance element of one of the Israeli reserve armored divisions (General Sharon's) located the boundary and gap between the Egyptian Second Army in the north and Third Army in the south.

By 11 October the Israeli's had decided the stalemate in the Sinai could only be broken by an Israeli crossing of the canal to the western side. The crossing was not undertaken at that time because sizable portions of Egyptian armor (over 900 tanks) were still uncommitted and concentrated on the western side of the canal. General Elazar, the Israeli Chief of Staff, wanted the crossing operation to wait until the Egyptians moved more of their armor to the eastern side which he fully expected would happen when the Egyptians renewed their attack. On 12 October the Egyptians began to cross their armor to the eastern side of the canal. This was in preparation for an attack to relieve pressure on Syria.

The Israeli plan now was to await the Egyptian attack, defeat it, and then cross the canal to encircle and cut off the southermost Egyptian Army.

The Egyptians attacked out from under their air defense umbrella on 14 October. Their objective was to secure the vital Sinai communications center of Bir Gifgafa. The Israelis were prepared. The Egyptians were simply no match in a war of movement. In one of the largest tank battles in history with over 2000 tanks engaged, the Egyptians quickly lost 264 tanks

compared to less than 20 Israeli tanks. This battle on 14 October marked the turning point of the war in the Sinai. The bulk of the Egyptian armor had been committed to the east and it had been attrited. The pre-conditions for the Israeli crossing operation to the western bank of the canal had been met and the order was issued to begin crossing during the night of 15 October. The war had returned to one of movement in which the Israeli's excelled.

From 15 October until the final cease fire a week later the purpose of Israeli military operations was to inflict the maximum damage possible on Egypt and Syria within the constraints permitted by superpower involvement.

LESSONS

On 24 October, Egypt and Syria accepted the cease fire and the fifth Arab-Israeli war ended. In spite of the numerous tactical and operational successes, for the Israeli Army as a whole, the October war had all the qualities of defeat, except for its substance. The Egyptian crossing of the canal and occupation of positions in the Sinai until the cease fire was the first major Arab military success since 1948. The fact that after being surprised by the enemy the IDF had swiftly recovered and was victorious on the battlefield by the time of the cease fire was generally overlooked. Almost immediately there began an intensive search and investigation as to what had gone "wrong".

One of the most obvious problems had been the lack of a proper balance in the IDF ground forces. The Egyptian's

innovative use of infantry armed with anti-tank guided missiles had blunted, to a large extent, the Israeli armored attacks while the dense anti-aircraft missile screen kept the Israeli Air Force from influencing the ground battle. Therefore initially the tank warfare in 1973 had little of the mobility that had characterized the 1967 war and on which Israeli doctrine and force structure was based. The lesson was that the unsupported tank had met its match in a missile based anti-tank defense. The "all tank" doctrine of armored warfare where reliance is placed almost solely on the tanks mobility and firepower to breach enemy defenses would not work against a modern anti-tank defense. Effective operations must be based on a proper balance of ground combat arms. The answer to the anti-tank missile threat should have been in sufficient artillery and mortars that could sweep the axis of advance and infantry mounted in fully tracked armored carriers that could move with and support the tanks. Since the Israeli's had neither, they were left with little alternative early on in the Sinai but to continue the unsupported armor attacks in an attempt to restore the situation.

While the tank had not lost its importance as the decisive ground combat system, to remain effective it had to be complemented by the other arms on the battlefield. Therefore, immediately following the war, special emphasis was placed on upgrading the infantry and artillery. New infantry units were raised. Training focused on being able to fight alongside tanks in integrated mounted combat. New weapons and equipment were acquired to permit them to do this such as M113's with deck mounted machine guns and self-propelled mortars also mounted in

M113's. Artillery focused on acquiring modern self-propelled guns to make that arm fully mobile along with providing it a greater degree of armor protection. Combat engineers were also moved out of their old M3 halftracks, switched to M113's and provided new equipment to better enable them to perform mobility and countermobility tasks in the forward battle area.

The Israeli's had also suffered because they had underestimated their opponent. The mobile warfare conducted in 1956 and 1967 had obscured the lesson learned in 1948 during the War of Independence that the Arab soldier had displayed good fighting qualities when in prepared defensive positions and when properly led.

The lesson learned in intelligence was that there had not been a problem in collecting information regarding the preparation for war by Egypt and Syria. In October 1973 the IDF had the necessary information. The Arabs achieved surprise because of a lack of proper evaluation and correct interpretation of the information they had gathered. Therefore after the war a decision was made that the states of alert of the IDF would not be influenced by an interpretation of the political situation in the Arab states but rather by changes in deployment and other military conditions in the field.

The war also showed that the nature of the air war had temporarily changed in the Middle East. Whereas earlier the air battle had been one of aircraft versus aircraft, during the October war it became one of aircraft versus ground based air defense systems. In terms of numbers and quality, the Russian

supplied anti-aircraft weaponry provided the most sophisticated air defense system yet deployed anywhere. It completely surprised the Israelis. With their relatively old Electronic Counter Measure (ECM) equipment the Israelis were unable to effectively jam all the SAM acquisition and tracking systems. And because of the mix of anti-aircraft systems used, offensive countermeasures employed to defeat one system often made the aircraft more vulnerable to another system. The lesson was that in order to continue flying in the face of such a sophisticated anti-aircraft defense, the Israelis would need greatly improved ECM equipment, stand-off guided munitions, and more survivable aircraft. After the war the air force set out to acquire the new technologies needed to enable it to continue flying in the face of the new threat. To assist the ground forces in the role of close air support the Air Force now also began to advocate acquisition of attack helicopters. These were retained within the Air Force but placed under the command of ground force commanders for combat operations.

The lessons were not all negative. A number of Israeli doctrinal and operational procedures had again been validated. Even with the advent of effective anti-tank missiles, the war had highlighted the importance and dominating presence of the tank on the modern battlefield. The defense of the Golan by tanks ready at their firing positions and sited to provide overlapping fields of fire stopped a numerically vastly superior Syrian attack. The Israeli view that the tanks mobility on the battlefield was a function of its survivability under fire was also confirmed. Tank design and modification criteria continued to prioritize

protection and survivability over speed. The continuing tank upgrade program in the IDF emphasized improving tank and crew survivability by: (1) avoiding detection and exposure to enemy tank fire; (2) avoiding being hit when detected; (3) minimizing damage if hit; and (4) capability for prompt repair. A second priority was to increase tank main gun fire effectiveness through improvements in precision aiming and stabilization of the gun platform. The lessons from the intense tank combat in the war along with the criteria noted above formed the basic design specifications of the Israeli manufactured Merkava tank. The Merkava project was initiated in 1972 after Britain terminated its secret tank cooperative program with Israel and was spurred after the 1973 war in a recognition of the need for self-sufficiency in major weapons systems.

The war once again proved the enormous importance of qualitative superiority over quantitative advantage. On the Golan the highly trained Israeli tank crews fought off Syrian tanks that outnumbered them in some cases by as much as 15 to 1. Overall the Arabs had a better than 2 to 1 tank advantage but lost tanks at a rate of 5 to 1.

"Operation Gazelle", the Israeli crossing of the Suez Canal severely tested the command and control capabilities of the divisions which were required to coordinate the mixed groupings of tanks, infantry, artillery, engineers, bridging units, helicopters, and close air support. They were successful in doing this but it pointed to the need for more sophisticated and standardized Command, Control, Communications, and Intelligence

(C₃I) equipment and vehicles in place of the ad hoc arrangements that were made. The developing Israeli electronics industry responded with new products which made control of mobile operations more effective, efficient, and secure in the face of the growing electronic warfare threat. Fully mobile and modern headquarters soon became available to divisions which eased the problems encountered during the war. Another ingenious development in the C₃I field was the Remotely Piloted Vehicle (RPV) built to provide real-time target information, intelligence on enemy movements, and updated data on friendly locations.

Finally, the division as a fighting tactical formation had proven itself. It was retained virtually unchanged with three to four armored brigades permanently assigned. The brigade though was modified to integrate armored infantry at the battalion level which, mounted in M113's, had the same degree of cross country trafficability as the tanks. To exercise the cooperation of infantry and armor new inter-arms training facilities were established.

The Israelis thoroughly analyzed the military lessons from the October War and aggressively implemented changes where needed. But perhaps the most important lesson from the war was that the Israelis could win militarily but lose politically.

CHAPTER VII

ENDNOTES

1. Chaim Herzog, The Arab Israeli Wars, p. 227.
2. Ibid., p. 227.
3. E. Luttwak and D. Horowitz, The Israeli Army, pp. 363-364.
4. Ze'ev Schiff, A History of the Israeli Army, p. 213.
5. Gunther Rothenberg, The Anatomy of the Israeli Army, p. 188.
6. Ze'ev Schiff, p. 218.

CHAPTER VIII

OPERATION "PEACE FOR GALILEE"

ORGANIZATION AND EQUIPMENT

The nine years between the end of the Yom Kippur War and Operation Peace for Galilee saw a dramatic increase in the size of the Israeli Defense Forces. In 1973 the IDF had 75,000 personnel in its standing forces. By 1982 this had more than doubled, increasing to 174,000. Again in 1973, when mobilized, the army could field a total of 19 infantry brigades (mechanized and motorized), 11 armored brigades, and four airborne brigades. By 1982 the structure had changed and grown to 10 mechanized infantry brigades (five of which were parachute trained), 33 armored brigades consisting of 3 tank and 1 mechanized infantry battalion, and fifteen artillery brigades (five battalions with three batteries each). Overall, this permitted fielding 11 armored divisions with a combined total of over 3600 tanks making the IDF one of the most armor heavy forces in the world.¹

There had also been significant equipment improvements in the infantry, the principal one being acquisition of 4000 new armored personnel carriers which amounted to a 500 percent increase over 1975. The number of artillery pieces had more than doubled along with an increase in the caliber of the guns. In terms of qualitative improvements many of the tanks and armored personnel carriers had been fitted with add-on armor (both passive and active) to provide greater protection against the

shaped charge anti-tank missiles which had blunted the Israeli armor in the first few days of the 1973 war. In addition, the elite 7th Armored Brigade was equipped with the modern Israeli produced Merkava tank which entered service in late 1979.

Clearly the Israeli army that entered Lebanon in June 1982 was a more capable and more balanced force than the army that had fought the Yom Kippur War in 1973. In fact, because the fighting remained limited to Syria and the Palestine Liberation Organization on one side and Israel on the other, with neither side throwing in their full weight, this was the first of the Arab-Israeli wars in which Israel enjoyed a quantitative superiority in both manpower and major weapons systems. In the end, Israel committed five armored divisions along with a number of separate brigades against a piecemeal Syrian commitment of two armored divisions and 15,000 PLO fighters organized into military formations ranging from reinforced battalion to brigade strength.²

COURSE OF THE FIGHTING

The 6 June 1982 invasion of Lebanon was led by the army's three regular armored divisions. Four reserve armored divisions plus several brigades of mechanized infantry were mobilized for the invasion. Not all of the reserve formations entered Lebanon. Two of the divisions were sent up to the Golan and remained there partly to replace the normally stationed regular division which had entered Lebanon and as a precaution against Syrian activity there. The other two reserve divisions entered Lebanon on 7 and

10 June respectively but were withdrawn and demobilized after the conclusion of the main phase of the fighting.

At its start, the objective of the operation was a rapid occupation of southern Lebanon to a depth of 45 kilometers with the aim of capturing or destroying the PLO forces entrenched within that area. To accomplish this the army was to maintain a rapid rate of advance, by-passing pockets of resistance. Three axis of advance were used, each assigned to one of the regular divisions. In the west, a division was to move along the Mediterranean coast. This route passed through the coastal cities of Tyre and Sidon which were infested by considerable number of PLO fighters. The division was to move north as rapidly as possible and affect link-up with an amphibious force that would be landed in advance to act as a blocking force.

The division on the central axis was to move along the western slopes of the Lebanon mountain range passing through the Syrian occupied town of Jezzine. Ultimately this division was given the task of seizing the Damascus-Beirut Highway to sever the major road communication link between Syria and Lebanon and thereby causing Syrian forces (it was hoped) to pull back into Syria.

The attack along the eastern axis was to secure the eastern flank of the overall operation by penetrating into the PLO stronghold called "Fatahland" and the Syrian controlled Bekaa Valley.

The amphibious landings to cut off PLO forces were to be augmented by large scale helicopter movement of troops behind PLO forces.

The division attacking along the western coastal axis linked up with the amphibious force which had landed north of Sidon on the second day of the operation. This cut off a large number of PLO fighters who put up stiff resistance in the cities of Tyre and Sidon. A large number of PLO fighters though managed to slip through the Israeli blocking positions and made their way north to Beirut.

The division attacking on the central axis made contact with a two battalion Syrian force at the town of Jezzine, also on 7 June, the second day of the operation. The bulk of the Syrian forces, principally the 1st Armored Division, remained uncommitted to the north in the Bekaa Valley. At Jezzine, where the terrain was hilly with few roads, the Israelis launched a brigade size armored assault without infantry or artillery support to dislodge the Syrians. Two Israeli tank battalions suffered significant losses to Syrian commando units who were armed with anti-tank missiles and RPG-7's and fired from concealed positions in the rough terrain which also prevented proper deployment of the Israeli tanks. During the evening of 8 June Israeli armor leading in the central sector was ambushed along a mountainous stretch of road which again precluded off-road deployment or even turning around of vehicles. Had they led with infantry, the Syrian positions would probably have been spotted. The battle lasted into 9 June with stiff Syrian resistance holding up the entire central advance. It was during the latter stages of this battle that the Israelis were forced to abandon a number of M60 tanks which had been modified with reactive add-on armor. These were then captured by the Syrians.

Through 8 June the Syrian SAM batteries located in the Bekaa Valley had limited full Israeli air support for ground operations. Citing the necessity for air support to keep casualties on the ground to a minimum Defense Minister Sharon received Israeli cabinet approval to attack and take out these SAM missiles. The strike on 9 June was phenomenally successful and activated military analysts all over the world to find out how the Israelis had so decisively defeated a modern air defense system which had stymied them in 1973.

By 11 June the Israeli assault had reached the high ground dominating Beirut and severed the Damascus-Beirut highway thereby effectively trapping 6,500 Syrian troops and 11,000 PLO fighters in the Lebanese capital. The subsequent siege of Beirut lasted another 70 days.

Overall, given their superiority, it was somewhat surprising that the ground thrust to Beirut did not make better headway. Though outnumbered, Syrian tanks and commandos had managed to hold up the IDF on several occasions and the PLO fighters fought doggedly in the cities. Except for the strike against the SAM missiles in the Bekaa Valley, the operation had none of the surgical characteristics its planners had intended. No doubt the mountainous terrain of southern Lebanon posed problems in employing the full power of armored units, but this should have been anticipated. Obviously there were some lessons to be learned.

LESSONS

Certainly the most dramatic success was in the air battle with the destruction of the Syrian anti-aircraft defenses and the subsequent lopsided aerial victory in which 86 Syrian jets were downed in aerial combat to no Israeli losses. Obviously the massive investment by the Israeli Air Force after 1973 in electronic countermeasure technology and intense training in SAM suppression techniques had paid off. And even though the Syrian systems in the Bekaa Valley did not consist of a full range of Soviet air defense weapons the lesson clearly was that it was possible to defeat modern air defenses with proper equipment, weapons, and tactics.

The Israelis had been monitoring the activity of the SAM sites in the Bekaa Valley by flying Remotely Piloted Vehicles (RPV's) into the area to obtain targeting data. The air force had then practiced attacking such mock sites in the Negev desert. On the morning of 9 June RPV's were again flown over the Syrian air defenses to trigger their moving target indicators and acquisition radars. The emissions from the Syrian radars were locked onto by Israeli electronic warfare specialists who passed the radar frequencies and updated targeting information to waiting strike elements. Air and ground based missiles were launched first to destroy the radars. The air launched missiles were mainly US supplied stand-off smart weapons which allowed the aircraft to remain outside the effective range of the air defense missiles. After the radars were eliminated ground launched missiles, forward placed artillery, and fighter bombers attacked

the missiles themselves. Of the 19 batteries deployed in the Bekaa, 14 were completely destroyed and three were severely damaged by the first strike. The two surviving batteries were destroyed the next day. When the Syrian Air Force intervened to halt the destruction of the SAM sites the largest air to air battle since World War II erupted and it marked the first time that an aerial battle was directed from airborne command and control facilities. Using airborne early warning aircraft orbiting off the coast of Lebanon the Israelis were able to track Syrian planes from the moment they took off. They then vectored Israeli interceptors against them.

The Syrians also attempted to provide centralized control of the air battle. But the Israelis using numerous ground and airborne jammers mounted in EC-707's and CH-53 helicopters, were able to jam the Syrian radio communications between the command and control system and the pilots. Because the Syrian command and control system was disrupted, Syrian pilots entered the aerial battle with no help and were often surprised by Israeli jets who had received advance warning of the Syrian approach. Aerial radars and jam resistant communications all tied to computerized command and control facilities had proven to be a vital ingredient in modern air combat.

The claim has been made that Israel's resounding aerial victory should be attributed to the superior equipment provided by the US as opposed to the inferior Soviet equipment used by the Syrians. That is a dangerous over-simplification. It was the combination of superior equipment with excellent intelligence and understanding of all aspects of the Syrian air defense system

that led to a plan which focused its first effort on taking away the Syrian's capability for seeing and controlling the air battle. The human part of planning remains a critical element of the highly specialized air battle.

Unlike earlier Arab-Israeli wars, the ground battles were extremely limited in scope and duration with neither side employing all assets available for combat. However, there were still some valuable lessons learned.

The IDF realized that while it did not want to fight in urban areas, it may simply not be able to avoid it. They realized they had not sufficiently trained for urban warfare and took steps to remedy this shortfall by training their infantry to fight in urban areas either as part of an armored combat team or independently on foot. The latter however was designated mainly as a specialty for the elite infantry units such as the Golani or the paratroop brigades. Based on their experiences of fighting in Tyre and Sidon the urban area fighting doctrine was amended to include use of APC mounted Vulcan air defense guns, anti-tank missiles, and even heavy artillery in the direct fire mode for reducing urban fortifications quickly.

One of the primary lessons of the 1973 Yom Kippur War had been the need for infantry trained to fight with tanks in a combined arms team. After 1973 the IDF attempted to achieve a more balanced mix of tanks and infantry. However, several of the larger engagements in Operation Peace for Galilee seemed to show that a proper balance had still not been achieved. The IDF spearheads were tank heavy and the tendency was to lead with

tanks regardless of the terrain. Not only was more infantry needed, the available infantry could have been utilized better. After the war an armor brigade was deactivated while two infantry brigades were activated. More infantry was assigned to armor units at lower levels and infantry armor cooperation is stressed in training. The overall division structure has however, remained the same, with armor predominating.

Of concern to IDF veterans was the apparent loss of night fighting skills in the army. Instead of exploiting the night to advance, in most cases momentum simply ceased at dark and did not resume until after daylight. Along with this there was a discerning trend to rely on firepower for tactical solutions rather than maneuver. In too many instances when a unit encountered difficulties and began to suffer losses, commanders pulled back their forces and saturated the area with fire from ground systems and the air before moving forward again. Therefore, instead of the planned fluid advance, the operation was characterized more by a jerky stop and go motion.

Significant problems were encountered in keeping forward units supplied, especially with fuel. A thorough terrain analysis should have anticipated problems in moving supply vehicles along the few roads from which often the combat vehicles could not deploy. As early as the second day, lead units ran short of fuel as trucks could not get through the traffic jams. Innovative use of C-130's and heavy lift helicopters to fly fuel to the forward units kept the advance moving after fuel pumps had been found to pump fuel into vehicles from the airlifted containers.

On the plus side, the ease with which the numerous switching of brigades and battalions from one division to another occurred showed the worth of the investment made after 1973 in new C₃I systems at division and lower levels. Already noted for their flexibility in tailoring organizations during combat, this reached an unprecedented level in Operation Peace for Galilee with minimal disruptions.

The war marked the first extensive use of mini-RPV's for tactical intelligence. During the battle for Jezzine, an RPV discovered a Syrian armored force moving through the mountains toward Jezzine. Information was passed to the air force which carried out strikes against the unit and kept it out of the battle.

The Israeli innovative solution of "add-on-armor" to defeat shaped charge missile attacks proved successful and ended predictions stemming from the 1973 war that anti-tank missiles (shaped charge warhead) had made the tank obsolete. Kinetic energy rounds fired from tanks were the principal killers of tanks. The then newly developed Israeli 105mm Armor Piercing Fin Stabilized Discarding Sabot (APFSDS) round was found capable of penetrating even the T-72 whose special armor was thought by some to be impervious to 105mm ammunition at most engagement angles.

The Merkava main battle tank passed its trial by fire. It was employed mostly in the rugged hill country of the eastern and central sectors. Its primary design criteria had been survivability and the fact that very few hits resulted in total losses proved gratifying.

Artillery, a weakness in the Israeli army through five wars, was praised for its effectiveness. Again this resulted from the lessons of the 1973 the Israeli army through five wars, was praised for its effectiveness. Again this resulted from the lessons of the 1973 war after which more guns were acquired, new multi-option fuzes were developed, and use of Israeli developed technical fire control computers which permitted rapid and accurate massing of fires.

Finally, to many skeptical Israeli ground commanders, the attack helicopter proved it deserved a place on the battlefield. The Israelis also discovered to their discomfort that they could be surprised by enemy attack helicopters. Therefore immediately after the war a priority was to develop an alerting radar which could be mounted on an M-113 to provide warning of helicopters out to range of 8 - 10 kilometers.

CHAPTER VIII

ENDNOTES

1. Ze'ev Schiff, A History of the Israeli Army, p. 297.
2. Chaim Herzog, The Arab Israeli Wars, p. 343.

CHAPTER IX

SUMMARY

During their relatively short existence, the Israeli Defense Forces have proven themselves to be among history's foremost practitioners of the military art. Despite being surrounded and vastly outnumbered by their enemies, they have been successful, sometimes spectacularly so, in each of the six conflicts with their Arab neighbors.

There are obviously numerous reasons for their success on the battlefield, not the least of which being the motivation drawn from repeated Arab vows to drive the "Jews into the sea. Also, for various reasons, the Arabs have never achieved the unity of effort necessary to take advantage of their quantitative superiority. Therefore in each war involving more than one Arab opponent the Israelis have been able to use their interior lines of communications to concentrate on defeating one Arab army at a time.

If possible, the main objective of Israel's strategy is to avoid war, i.e. deterrence. It realizes that for deterrence to be credible it must maintain defense forces which are seen as capable of defeating any Arab coalition. It therefore follows that the main task of the Israeli Defense Forces is to maintain a clear conventional military superiority, a task which is becoming increasingly difficult as Israel finds herself at the limits of her capacity to enlarge her armed forces while the Arab states

have large untapped resources. One implication of this is a possible shift to a nuclear based deterrence for which the recent "leaks" concerning Israel's nuclear capability may be laying the groundwork. But the hopes for maintaining a conventional superiority are tied more than ever to qualitative factors.

Qualitative superiority consists of materiel and non-materiel aspects. The materiel aspects deal with such things as weapons and technology in which the Israeli's have only recently enjoyed an advantage. This will probably cease to become such as the Arabs continue to arm themselves not only with modern Soviet equipment but also with sophisticated western, particularly American, equipment.

What seems to remain as the only area capable of providing a conventional advantage in the future is non-materiel quality which deals with such things as doctrine, organization, organizational talent, planning and decision making at the higher military levels and individual/crew proficiency, capacity for improvisation and morale and the ability to maintain cohesion under stress at the fighting level.

A close review of the six Arab-Israeli wars shows that the winning difference in each was the non-materiel quality of Israel's manpower as outlined above. In 1948 it was the bold decision to let the Israeli settlements defend themselves thereby releasing the field forces for offensive operations against the Arab regular armies. Conventional military wisdom would have prescribed a defensive campaign. However, by attacking, the Israeli's were able to seize the initiative from the Arabs, dictate the pace of action, and effectively preclude the Arabs

from employing their numerical superiority in a militarily significant way.

In 1956 it was the decision made on the field, against orders from the Chief of Staff, to launch the 7th Armored Brigade's attack one day early which resulted in the critical rupture of the Egyptian defenses and permitted immediate exploitation through the depth of the Sinai to rout the Egyptian Army.

In 1967 it was the preemptive air strike which was executed with superb skill by Israeli pilots who destroyed the Arab air forces on the ground with a speed and precision unheard of before the widespread use of "smart" weapons.

In 1973 it was the phenomenal skill and courage of the Israeli tank crews on the Golan heights which faced and defeated odds up to 10 to 1. This was followed by the daring thrust to the west bank of the Suez Canal to regain the initiative on the southern front.

In 1982 it was the careful planning and skill in executing the SAM suppression in the Bekaa Valley and the subsequent destruction of the Syrian Air Force.

Each of these decisive actions were made possible and executed by superior "manpower quality." Finally, in each of the wars, it was the skill and determination of the individual Israeli soldier who, while mobilized only a few days before battle, dominated his opponent at the point of contact.

As rapidly advancing technology provides new weapons at an ever quicker and more expensive rate it cannot be forgotten that

the key element in future conflict will still be the quality of leaders and soldiers who employ the weapons on the a battlefield. to maintain that manpower superiority must be the first focus of resource allocation. This is a basic lesson for all armies.

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ANNEX A

1948 WAR

APPROXIMATE STRENGTHS OPPOSING FIELD FORCES

	<u>15 May 1948</u>	<u>12 October 1948</u>
Egypt	7,000	20,000
Jordan	7,500	10,000
Syria	5,000	5,000
Iraq	10,000	10,000
Lebanon	2,000	2,000
Army of Salvation	5,000	5,000
Arab Lib. Army	<u>5,500</u>	<u>3,000</u>
Arab TOTAL	42,000	55,000
Israeli TOTAL	34,400	45,000

ESTIMATED LOSSES

	<u>KILLED</u>	<u>WOUNDED</u>	<u>TOTAL</u>
Arabs	15,000	25,000	40,000
Israeli	6,000	15,000	21,000

ISRAELI EQUIPMENT POSTURE IMPROVEMENT

<u>TYPE</u>	<u>15 May 1948</u>	<u>12 October 1948</u>
Field & Anti-aircraft Guns	6-65 mm mountain 10-20 mm AA	250 including 60-75 mm
Mortars 120 mm	0	12
6 inch	0	33
3 inch	105	389
2 inch	682	618
Davidka	12	22
Plats and AT rifles	75	675
Light and Medium MG's	1,550	7,550
Rifles, all types	22,000	60,000
Sub-machine guns	11,000	22,000
Tanks	3 inoperative	10 H-35 1 Sherman 2 Cromwell
Planes	10	10 Me-109 14 Spitfire 3 B-17 1 DC-3
Ships	0	3 Corvettes

ANNEX C

1956 WAR

APPROXIMATE FORCE STRENGTHS - FIELD FORCES

Egypt	150,000
Israel	100,000

ESTIMATED LOSSES

	Killed	Wounded	Captured Missing	Total
Egypt	1,000	4,000	6,000	11,000
Israel	189	899	4	1,092

MAJOR WEAPONS SYSTEMS COMPARISONS

	Egypt	Israel
Tanks	530 ¹	400 ⁴
APC's	200	450 ⁵
Artillery	500	150
Self-Propelled AT	200 ²	0
Combat Aircraft	255 ³	155 ⁶

- (1) Includes 100 Su-100 assault guns
- (2) Archer 17-pounders
- (3) 120 Mig 15; 40 Vampire; 38 Meteor, 8 Furies; 49 Il-28
- (4) Includes 100 AMX-13 light tanks
- (5) M-3 half tracks
- (6) 60 Mysteres; 25 Ouragans, 25 Meteors, 29 Mustangs; 16 Mosquitos

ANNEX D

1967 WAR

APPROXIMATE FORCE STRENGTHS - FIELD FORCES

		<u>Egypt</u>	<u>Jordan</u>	<u>Syria</u>	<u>Iraq</u>
Arab	309,000	200,000	46,000	63,000	-
Israel	210,000				

ESTIMATED LOSSES

	<u>Total</u>	<u>Killed</u>	<u>Wounded</u>	<u>Captured/Missing</u>
Arab	38,464	7,000	22,884	8580
Israel		983	4,517	15

MAJOR WEAPONS SYSTEMS COMPARISONS

		<u>Egypt</u>	<u>Jordan</u>	<u>Syria</u>	<u>Iraq</u>
	<u>Tanks</u>	1,300 ¹	287	750	-
Arab	2,337				
Israel	1,000 ²				
	<u>APC's</u>	1,050	210	750	-
Arab	1845				
Israel	1500 ³				
	<u>ARTY</u>	575	72	315	
Arab	962				
Israel	203				

	<u>SAM</u>	160	0	0	-
Arab	160				
Israel	50				
	<u>AA Guns</u>	950	?	1,100	-
Arab	2,050				
Israel	550				
	<u>Chc ACFT</u>	431 ⁴	18	127 ⁵	106
Arab	682				
Israel	286 ⁶				

- (1) 400 T-34; 450 T-54/55; 100 Su-100; 100 JS-3
- (2) 200 M-48; 250 Centurions; 150 AMX-13; 400 Super Sherman
- (3) M-3 Halftracks
- (4) 5 Su-7; 163 MIG-21; 40 MIG-19; 100 Mig-15/17; 30 Tu-16;
43 IL-28 *
- (5) 40 MIG-21; 68 MIG15/17; 15 Tu-16; 4 IL-28
- (6) 92 Mirage; 24 Super Mystere; 72 Mystere; 55 Ouragon;
24 Light Bombers

* Egypt was short qualified pilots

ESTIMATED LOSSES

	Tanks	Aircraft
Arabs	1056	444
Israeli	394 **	40

** Half repaired and returned to full operational status

ANNEX E

1973 WAR

APPROXIMATE FORCE STRENGTHS COMMITTED

		<u>Egypt</u>	<u>Syria</u>	<u>Iraq</u>	<u>Jordan</u>	<u>Other Arab</u>
Arab	505,000	315,000	140,000	20,000	5,000	25,000
Israel	310,000					

ESTIMATED LOSSES

	<u>Total</u>	<u>Killed</u>	<u>Wounded</u>	<u>Captured/Missing</u>
Arab	36,628	8,528	19,549	8,551
Israel	12,146	2,838	8,800	508

MAJOR WEAPONS SYSTEMS COMPARISONS

		<u>Egypt</u>	<u>Syria</u>	<u>Iraq</u>	<u>Jordan</u>	<u>Other Arab</u>
	<u>Tanks</u>					
Arab	4,841	2,200	1,820	300	150	371
Israel	2,000					
	<u>APC's</u>					
Arab	4,320	2,400	1,300	300	200	120
Israel	4,000					
	<u>ARTY over 100mm</u>					
Arab	2,055	1,210	655	54	36	100
Israel	570					
	<u>Mortars (over 100mm)</u>					
Arab	650	350	300			
Israel	375					

SAM Launchers

Arab	1,280	880	360	20	20
Israel	75				

SA-7/Redeye

		Egypt	Syria	Iraq	Jordan	Other Arab
Arab	3,000	2,000	1,000			
Israel	-					

AA Guns

Arab	3,650	2,750	1,900
Israel	1,000		

AT Missiles

Arab	1,200	850	350
Israel	280		

AT Rockets

Arab	5,300	2,500	2,800
Israel	650		

ESTIMATED LOSSES

	Arab	Israel
Tanks	2,554	840
APC's	850+	400
ARTY	550+	?
SAM Batteries	47	-
Aircraft	360	102
Helicopters	15	?

ANNEX F

IDF GROWTH

1974-1982

STRENGTHS

	1974	1982
Total Standing Forces	98,500	174,000
Mobilized Strength	310,000	500,000
Army		
- Standing	81,500	135,000
- Mobilized	275,000	450,000
Navy		
- Standing	4,000	9,000
- Mobilized	8,500	10,000
Air Force		
- Standing	13,000	30,000
- Mobilized	20,000	37,000
Army Brigades	36	58

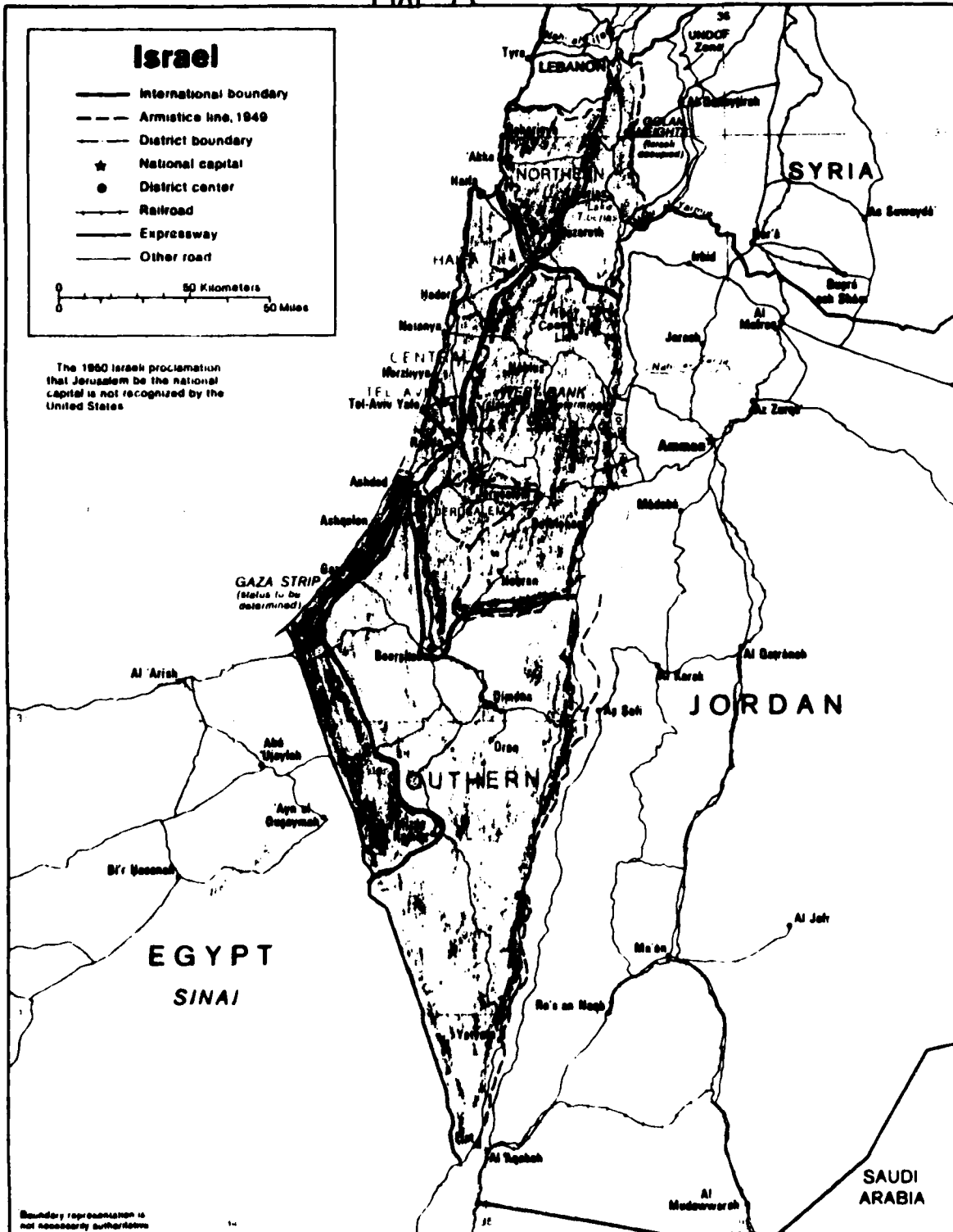
MAJOR WEAPONS SYSTEMS

	1974	1982
Tanks	1,700	3,600
APC's	1,600*	8,000**
Artillery	350	900
Combat AC'FT	475	634

* Includes 1,200 M 2/3 halftracks & 400 M-113's

** Includes M-113's, OT-62, BTR-40/-50/-60P/-152

MAP A



Base 505277 (A00863) 10-82

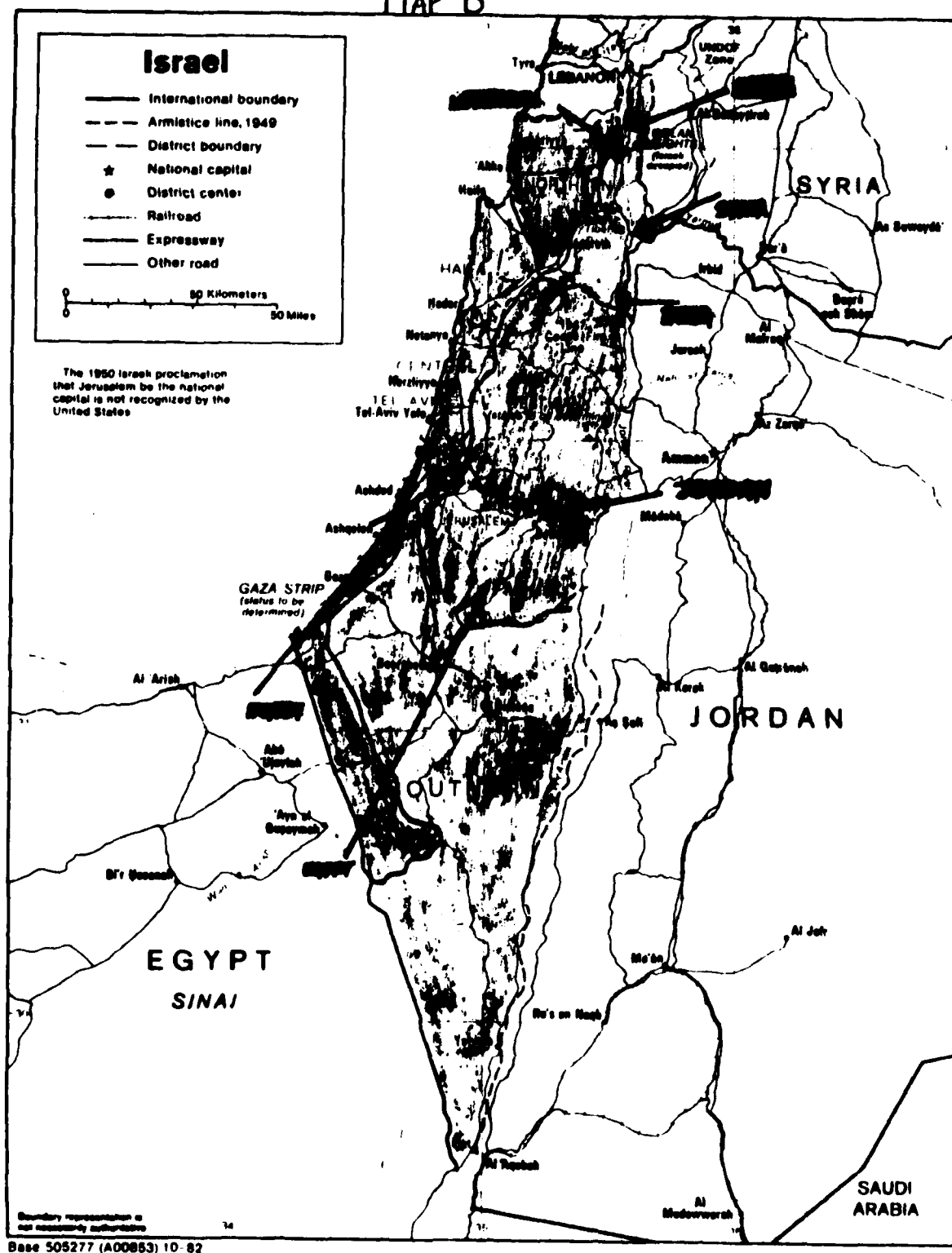
UN PARTITION PLAN

■ Arab Sovereignty

■ Jewish Sovereignty

— JERUSALEM UNDER INTERNATIONAL CONTROL

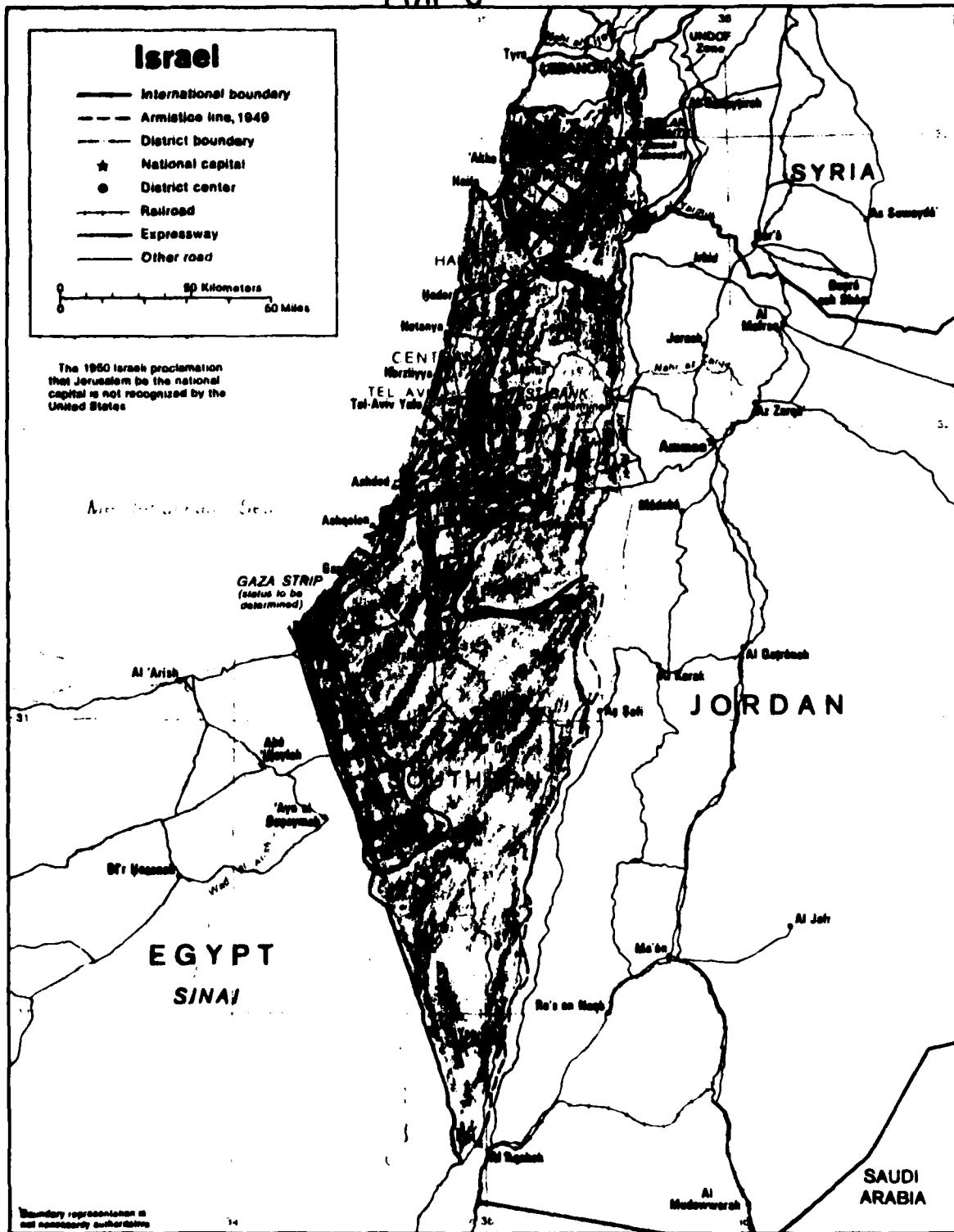
MAP B



ATTACK OF ARAB REGULAR ARMIES

15 MAY - 10 JUNE

MAP C



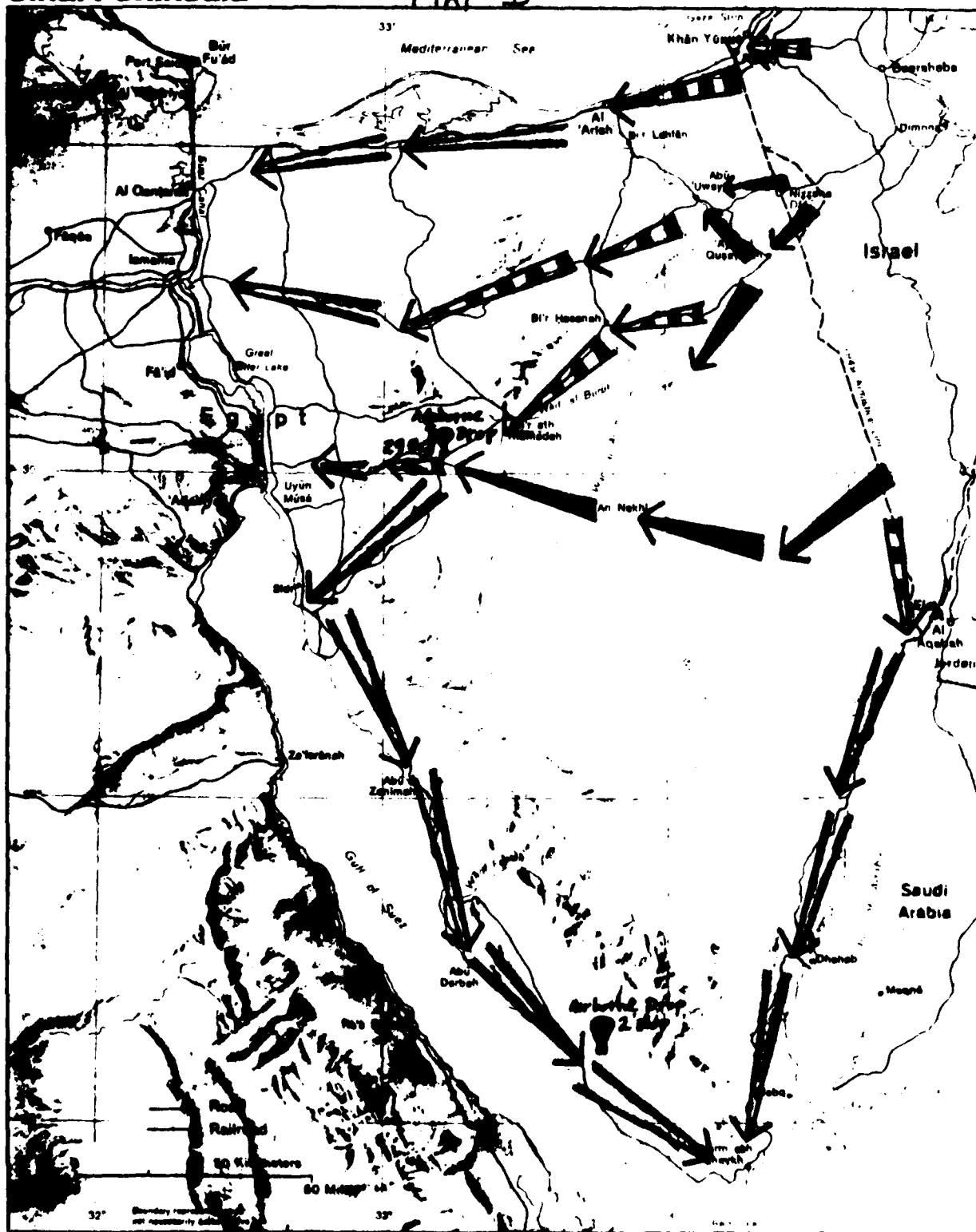
Base 505277 (A00853) 10-82



ISRAELI GAINS FOLLOWING WAR OF INDEPENDENCE

Sinai Peninsula

MAP D



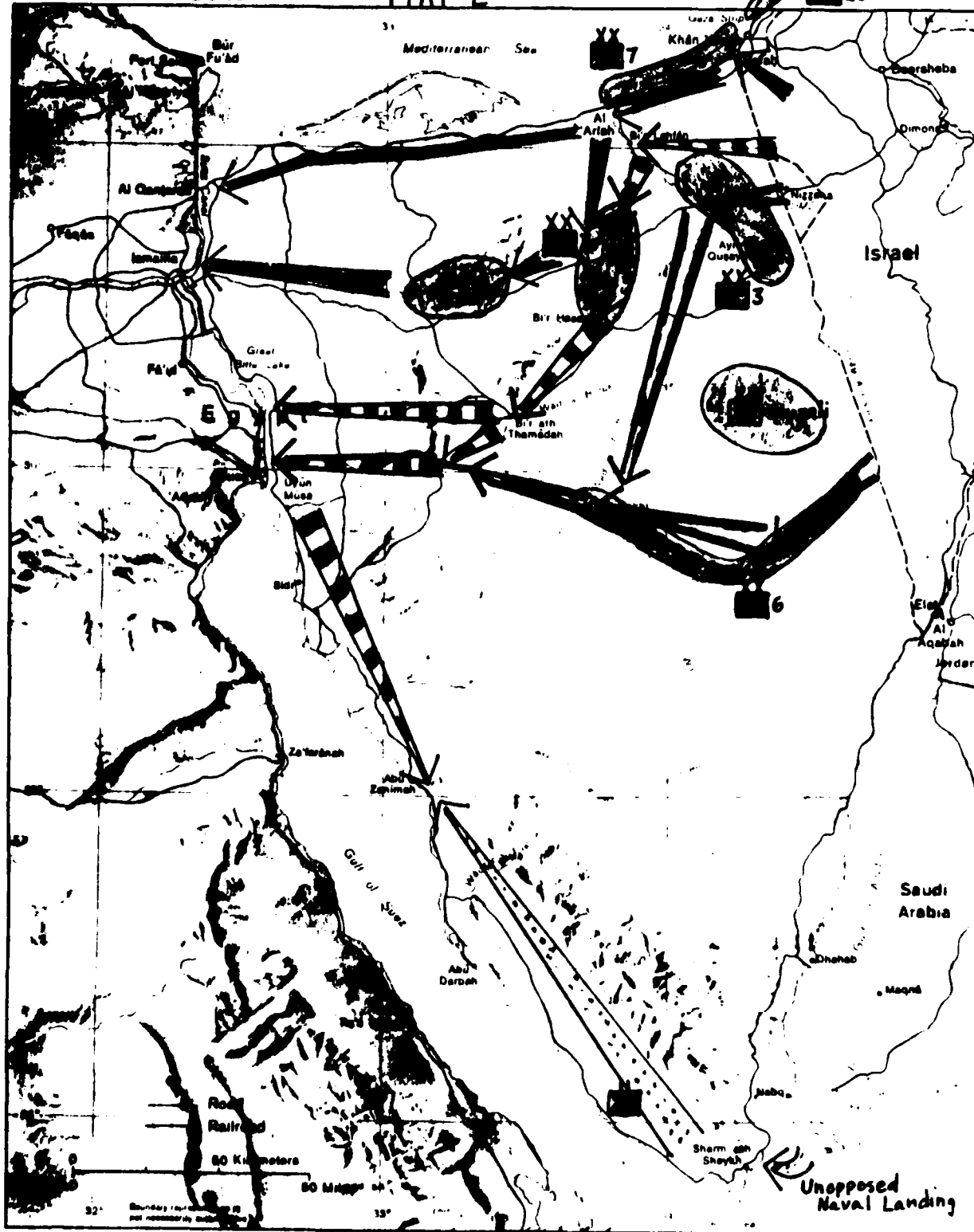
503937 10-78 (544089)

1956 WAR

- Phase A - 29-30 Oct. '56
- ▨ Phase B - 31 Oct. - 1 Nov. '56
- ▩ Phase C - 2-5 Nov. '56

Sinai Peninsula

MAP E

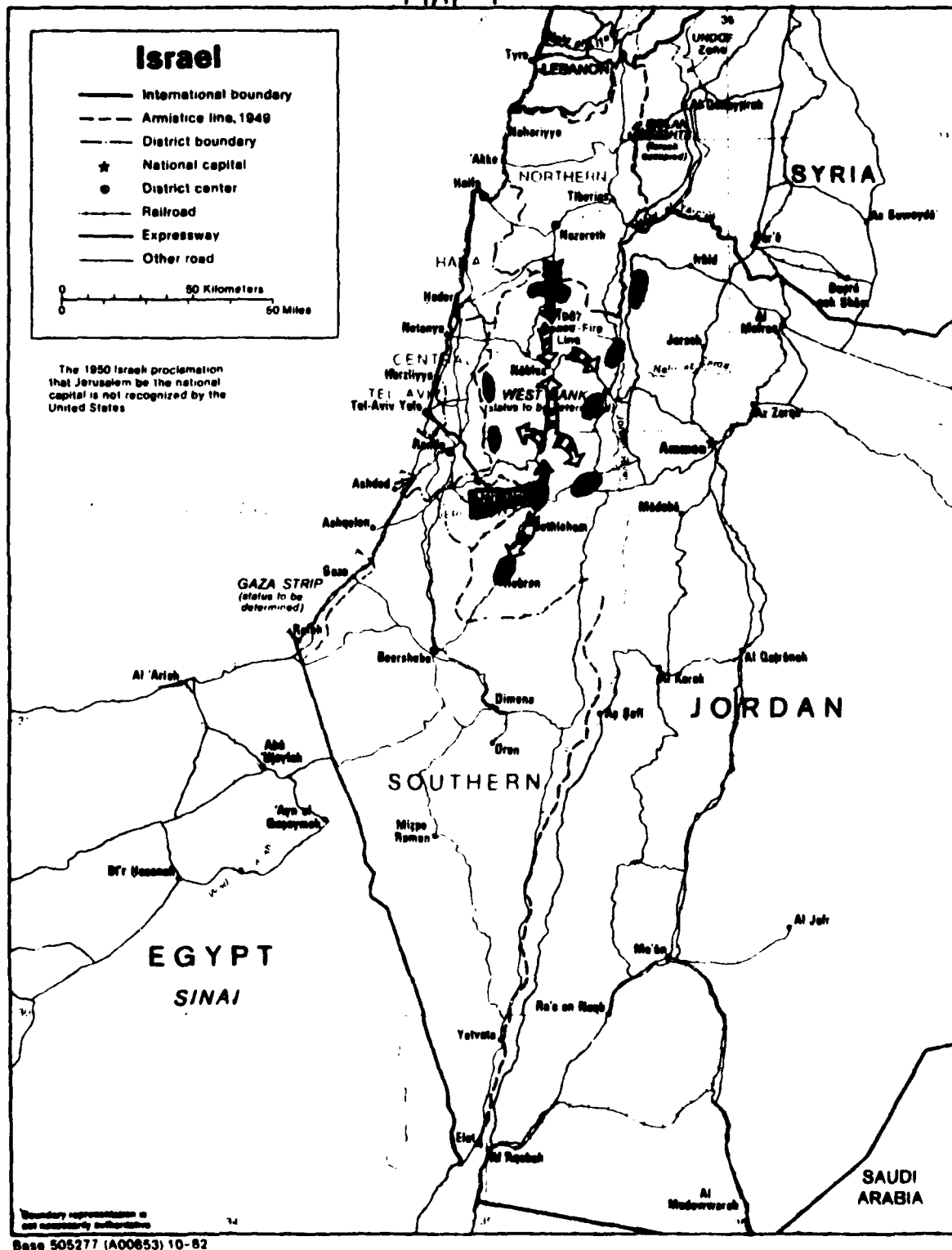


EGYPTIAN DISPOSITIONS

- ← MG TAL'S DIVISION
- ← MG YOFFE'S DIVISION
- ← MG SHARON'S DIVISION

1967 WAR - SOUTHERN FRONT - EGYPT

MAP F



WEST BANK AREA

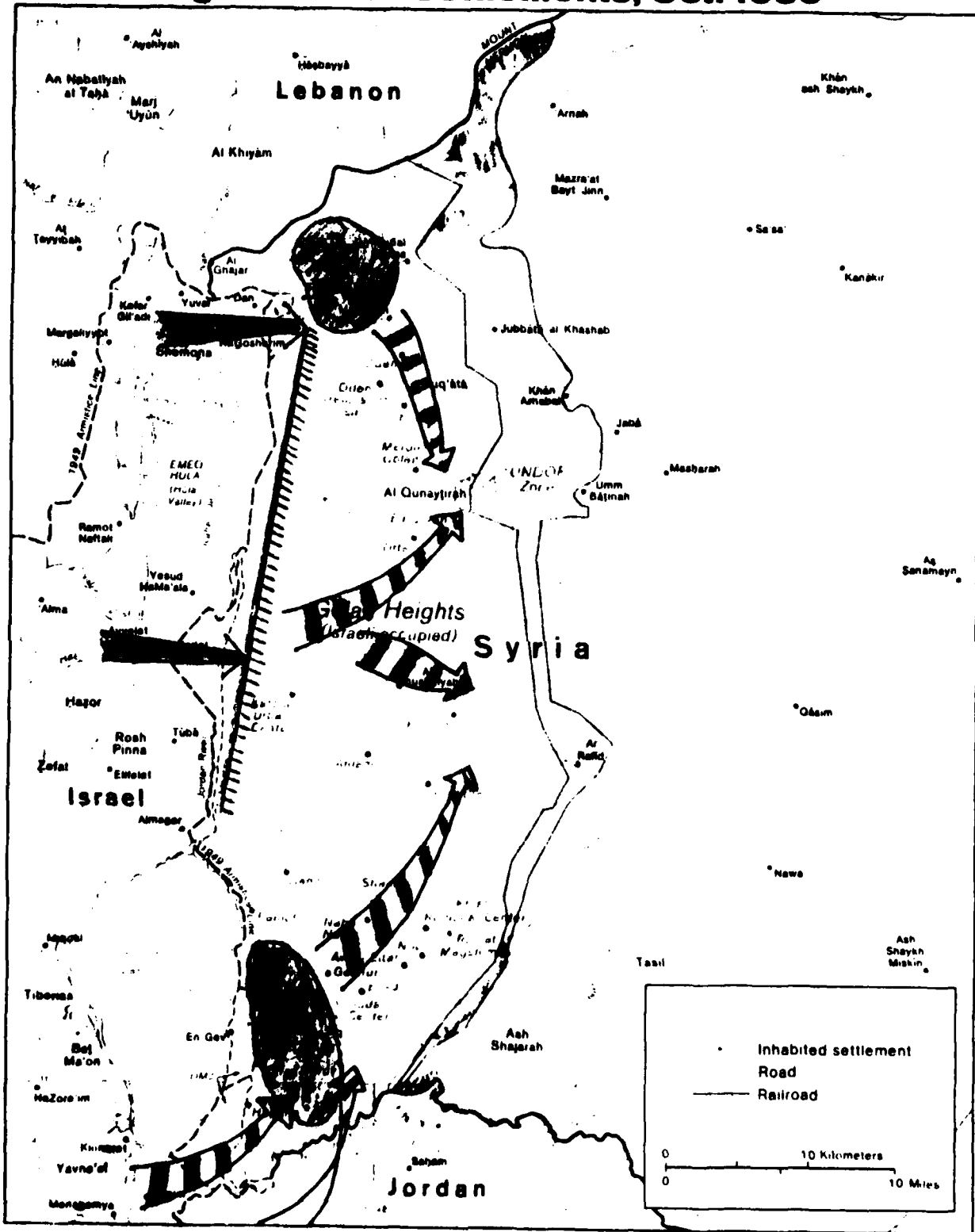
● JORDANIAN POSITIONS

ISRAELI OPERATIONS → 5-6 JUN → 7 JUN

1967 WAR - CENTRAL FRONT - JORDAN

MAP G

Golan Heights: Israeli Settlements, Oct. 1980



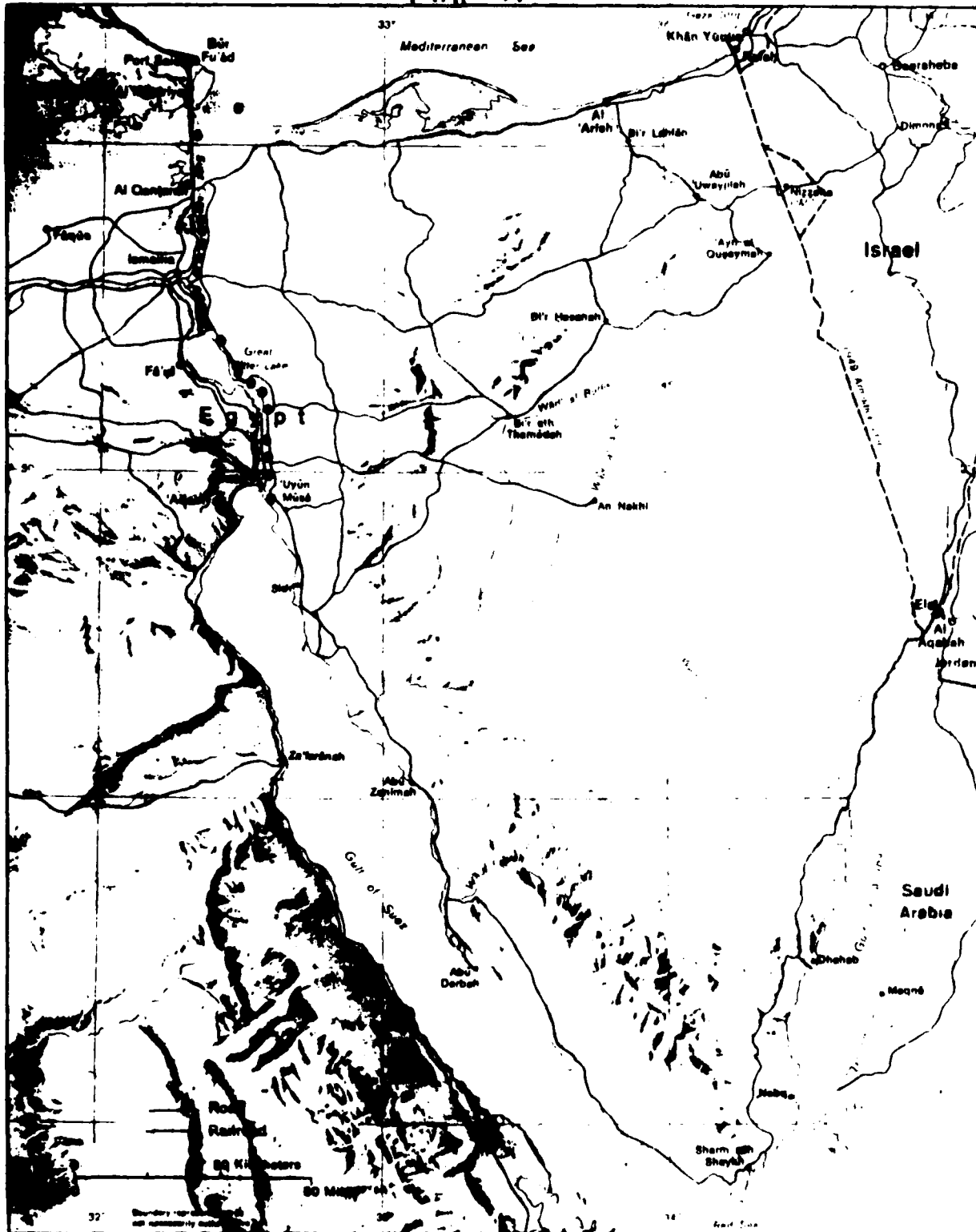
SYRIAN POSITIONS & DEFENSIVE LINE

ISRAELI OPERATIONS 9 JUNE ➡ 10 JUNE ➡➡

1967 WAR - NORTHERN FRONT - SYRIA

Sinai Peninsula

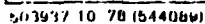
MAP H



• BAR-LEV LINE POSITIONS

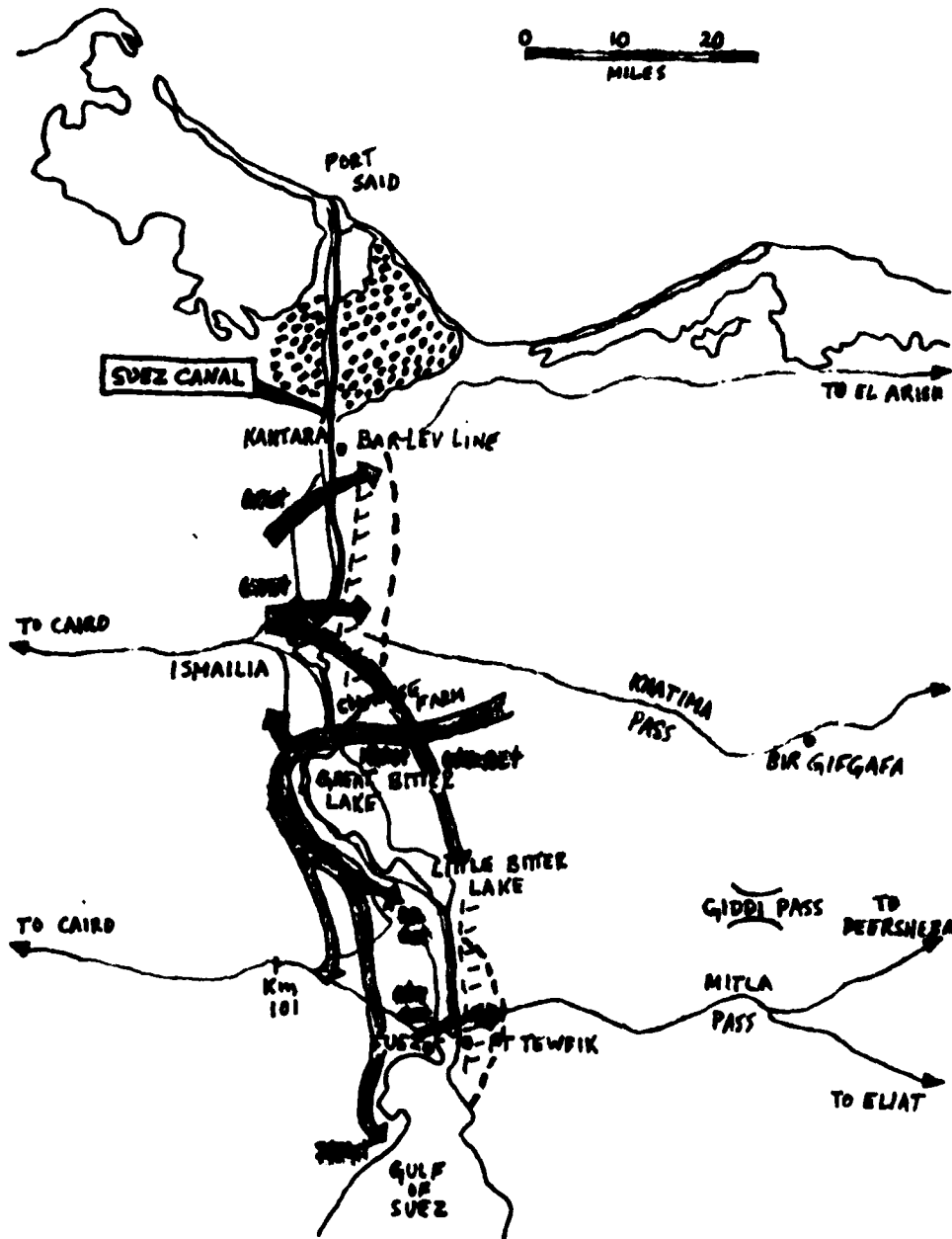
1973 WAR

MAP I



1973 WAR - EGYPTIAN DEPLOYMENT FOR CROSSING

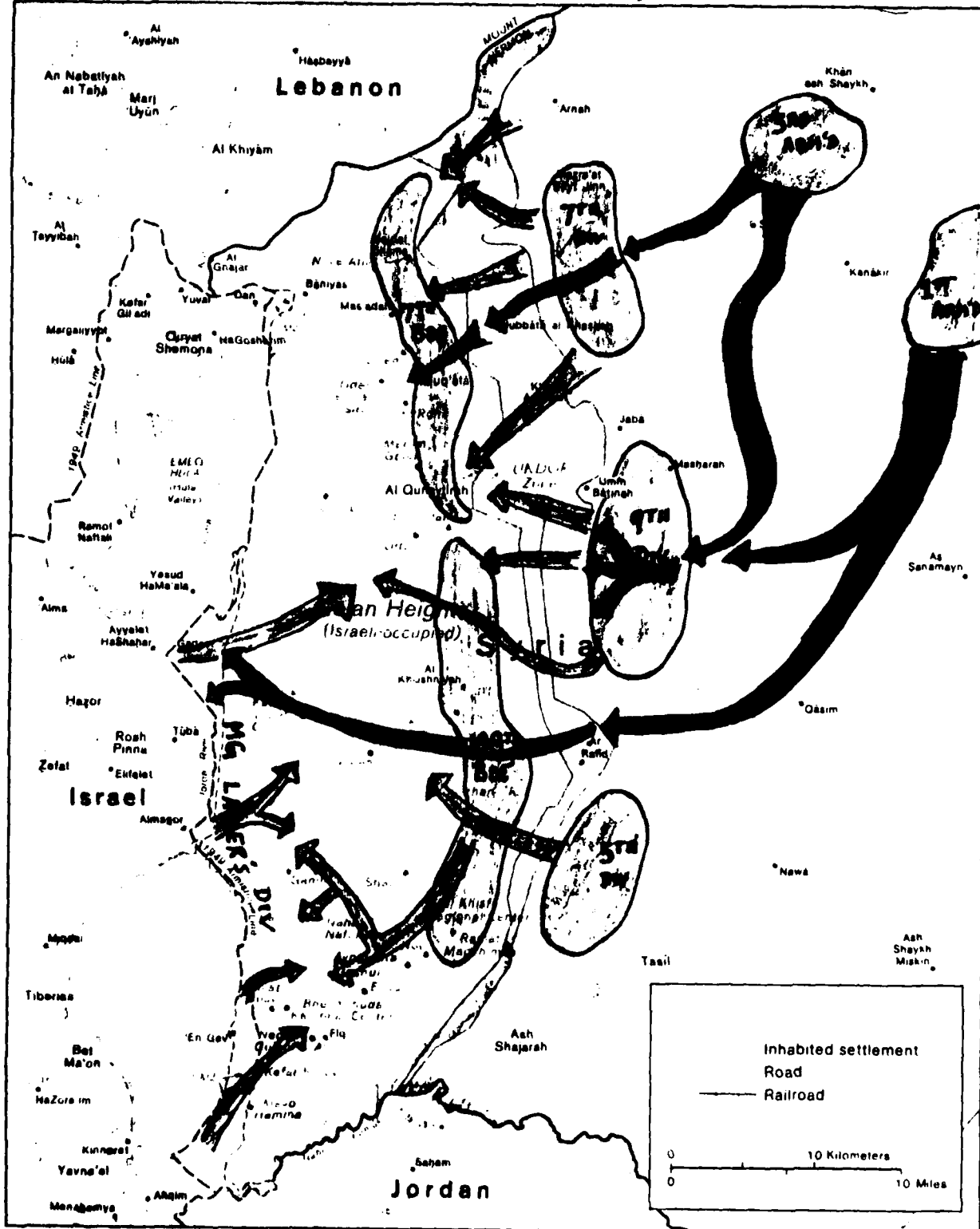
MAP J
SUEZ CANAL FRONT



1973 WAR

MAP K

Golan Heights: Israeli Settlements, Oct. 1980



MAXIMUM SYRIAN PENETRATIONS

MIDNIGHT 7 October

1973 WAR

Map of the Golan Heights Region (October 1980)

Geographical Features:

- Lebanon:** Located to the north, with cities like Hama, Latakia, and Tartus.
- Syria:** Located to the northeast, with cities like Hama, Latakia, and Tartus.
- Israel:** Located to the southwest, with cities like Haifa, Haresh, and Hama.
- Jordan:** Located to the south, with cities like Amman, Zarqa, and Irbid.
- Golan Heights (Israeli-occupied):** The central focus of the map, showing various settlements and military movements.

Military Movements (October 1980):

- SYRIAN & JORDANIAN FORCES:** Indicated by arrows pointing towards the Golan Heights from the north and northeast.
- SYRIAN FORCES:** Indicated by arrows pointing towards the Golan Heights from the northeast.
- JORDANIAN FORCES:** Indicated by arrows pointing towards the Golan Heights from the south.

Legend:

- Inhabited settlement:** Represented by a solid black dot.
- Road:** Represented by a dashed line.
- Railroad:** Represented by a solid line with cross-ticks.

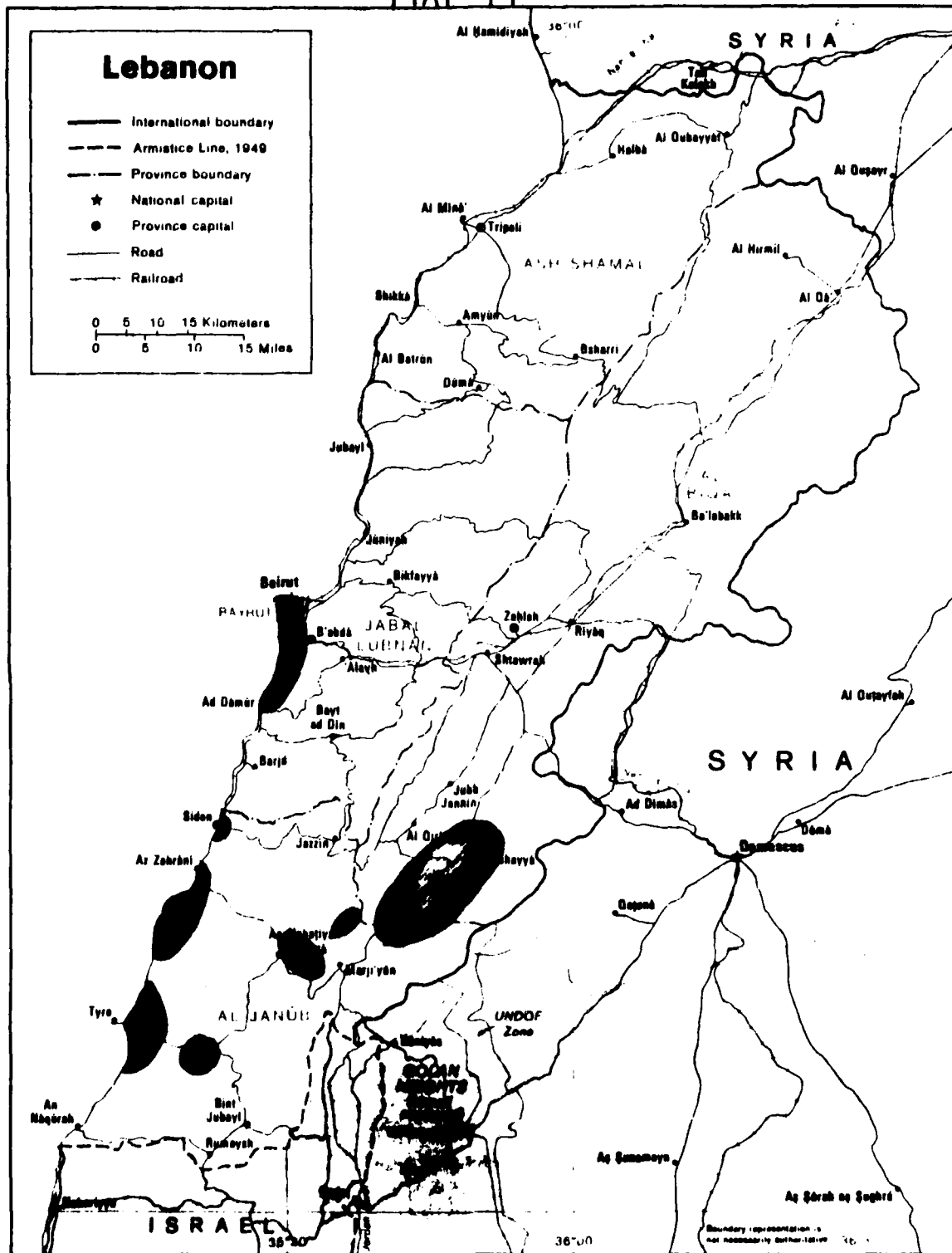
Scale:

- 0 to 10 Kilometers
- 0 to 10 Miles

**ISRAELI BREAKTHROUGH
INTO SYRIA BY 11 OCT '73**

1973 WAR-ISRAELI COUNTERATTACK-NORTHERN FRONT

MAP M



Base 505042 (544600) 2-62

 PLO DISPOSITIONS @ 15,000

1982 WAR

Lebanon

- International boundary
- - - Armistice Line, 1949
- Province boundary
- ★ National capital
- Province capital
- Road
- Railroad

0 5 10 15 Kilometers
0 5 10 15 Miles

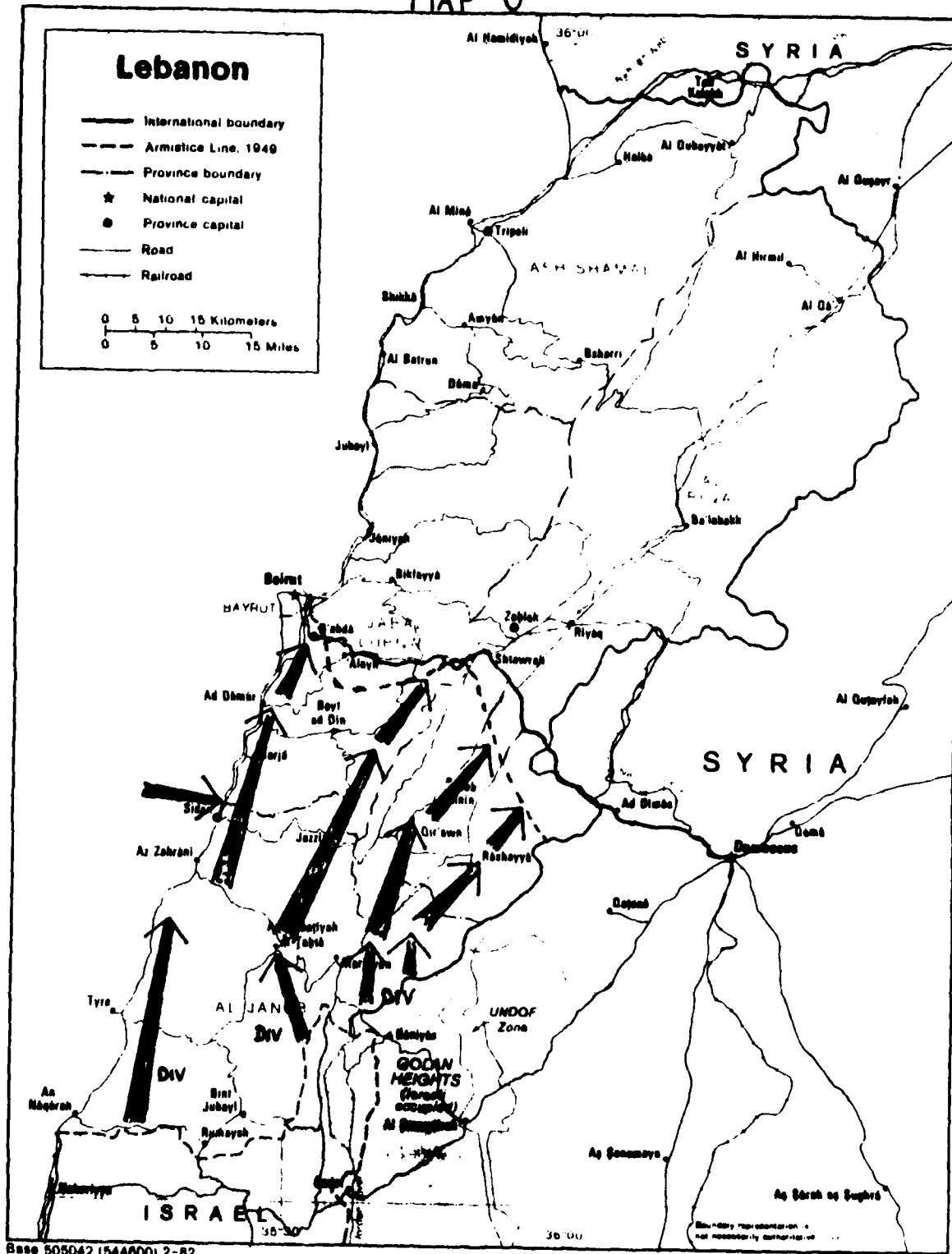
The map shows Lebanon's provinces: North, Mount Lebanon, Akko, Beqaa Valley, South, and Nabatieh. Major cities include Beirut, Tripoli, Tyre, Sidon, and Haifa. Military units are indicated by arrows: INF BDE (Infantry Brigade) pointing towards Beirut and ARM'D DIV (Armed Division) pointing towards Sidon. The UNDOF Zone is shown along the border with Israel.

Base 505042 (544600) 2-82

SYRIAN DISPOSITIONS @ 30,000

1982 WAR

MAP 0



ISRAELI ADVANCES



12 JUNE CEASE FIRE LINE

1982 WAR